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POTAWATOMI I: PHONEMICS, MORPHOPHONEMICS, AND MORPHOLOGICAL SURVEY

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In this and subsequent articles of the series is offered substantially what constituted the writer's Doctoral Dissertation at Yale, 1939.[1] The material is somewhat condensed, particularly in the section on phonemics and in the omission of lists; but no attempt has been made at a thoroughgoing revision which would reinterpret the raw data in the light of more recently developed techniques of analysis. Occasionally, however, I indicate lines along which revision would be desirable.

1. Phonemes.[2] Potawatomi has five vowels: /i/ (machine), /e/ (led), /a/ (father), /o/ (rôle), and /u/ (about like the a of sofa). Vowels do not occur in utterance-initial nor next to each other.

There are six obstruent consonants: /p t č k s š/. These occur freely in all positions, and in clusters of two or more. Each single obstruent or cluster of two occurs in two varieties: a lenis type, single lenis obstruents being frequently voiced in voiced surroundings, and a fortis type, indicated by postposed /·/, which is longer, always voiceless, and more strongly enunciated. The single fortis stops do not occur in utterance-initial or -final: ʔo k·we *the woman*, but initially kwe *woman*.

There are five nonobstruent consonants: /m n w y/ and /ʔ/. These occur freely in

[1] Field work summers 1937–8, under grants from Social Science Research Council, spring 1940 under an anonymous grant administered through the University of Chicago; preparation of dissertation spring 1939 under grant from American Council of Learned Societies. Thanks are due to these agencies and to numerous individuals, including Leonard Bloomfield, Murray Emeneau, Morris Swadesh, George Trager, and Carl Voegelin. Previously published: Potawatomi Syntax, Lg. 15.235–48 (1939) [essentially chapter 11 of the dissertation]; The Position of Potawatomi in Central Algonkian [PPCA], Papers of the Michigan Academy of Sciences, Arts, and Letters, Vol. XXVIII, 537–42 (1942; published 1943). Statements made in Potawatomi Syntax will not be repeated here. Reprints of PPCA are available on request, from the author.

[2] Based on PPCA §1, a condensation of a long chapter of the dissertation. Detailed description of the phonology is left for separate treatment.

all positions, and in clusters next to each other or next to obstruents.

I have no accurate information on intonations and the like, and write commas and periods where convenient.

In interjections occur certain sounds not subsumed in the phonemes listed above: /h/ and nasalization of vowels: ʔahaw *well! aha! then, next*, both vowels long and nasalized, high pitch on the first, falling pitch and a stress on the second; he *Hm! So!*, falling intonation, nasalized vowel of /e/ timbre or any other, or even a syllabic nasal.

2. Morphophonemics.

2.1. External Morphophonemics. From utterances we extract WORDS (essentially, stretches before and after which the informant will pause on occasion; but see **3**). Some of these appear in different phonemic shapes depending on environment. In each such case of alternation, we set up as BASIC form that form from which, with a simple set of statements, all the other forms can be predicted. It is possible to do this without introducing special morphophonemic symbols and without making lists.

Words which in utterance-initial begin with prevocalic /ʔ/ occur in utterance-medial, after a consonant, both in this form or without the /ʔ/: ʔotan *town*: ktušyamun (ʔ)otan *we go to town*. The form with /ʔ/ is basic.

Words which in utterance-medial begin with a fortis stop /p· t· č· k·/ occur in utterance-initial without the fortis feature: nwapma k·we : kwe nwapma *I see the woman*. The form with fortis stop is basic. This alternation does not apply in the case of clusters of more than one obstruent which are fortis: these occur in the same shape in utterance-initial.

Words which in utterance-medial before a semivowel or nasal end in a fortis stop occur in all other conditions without /·/: muk· nwapma : nwapma muk *I see the beaver*. The form with /·/ is basic.

When a word with basic final fortis stop precedes a word with basic initial prevocalic /ʔ/ within an utterance, either /·/ fails to appear, or /ʔ/ fails to appear, or both: muk ʔotu : muk· otu : muk otu *the beaver over there*.

There is free alternation between utterance-initial /y/ and /ʔy/, and between /w/ and /ʔw/, all prevocalic. Medially the alternant with /ʔ/ is more common when a vowel or semivowel precedes, and that without /ʔ/ usual elsewhere. We establish as basic form, for each individual word, whichever alternant better suits the requirements of internal morphophonemics (**2.2**).

With some speakers /w/ does not occur interconsonantally; for others it does when the preceding consonant is /k/ (or /k·/ʔ). For both dialects one has wtuk·weyomun wapman: wapman tuk·weyomun *he sees his wife;* the form with /w/ is basic.

2.2. Internal Morphophonemics. From the basic forms of words we extract MORPHEMES (minimum recurrent partials with constant meaning). A great many of these appear in differing phonemic shapes depending on environment, and the statement of these alternations cannot be made without resort to special morphophonemic symbols, or lists, or both. We use both techniques, the choice depending on convenience.

It is worthwhile to begin by surveying some of the more far-reaching types of alternation. Note first pairs such as the following:

nkutšuwe	*he wins a race*
nnuktušwe	*I win a race*
ktumočke	*he's fishing*
nkwutmočke	*I'm fishing*
pmos·e	*he's walking*
npums·e	*I'm walking*

The second of each pair has an initial /n/ lacking in the first, and, accompanying this, a different internal structure, though the

similarities are obvious. The similarities and differences are revealed clearly if we write thus:

n kut šuwe
nnuk tuš we

k tumočke
nkwut močke

p mos·e
npum s·e.

The similarity is one of consonantism, save for the /w/ which appears in the second member of the second pair, and not in the first member. The difference is in the location of the vowels, though in each pair some vowels occur in both members.

Another type of alternation appears in

nmina	*I'm giving it to him*
kmiš	*you're giving it to me*
nnus·a	*I'm killing him*
knuš·	*you're killing me*
(nwapma	*I see him*
kwapum	*you see me*).

The first member of each pair has initial /n/ and final /a/; the second member of each pair has initial /k/ and final zero. Comparison of the first two pairs with the third (and with many others) shows that /min/ and /miš/ are the same element, and /nus·/ and /nuš·/ likewise. In some elements, therefore (but not in all), there is an alternation between final /n/ and /š/, or between final /s·/ and /š·/.

Alternations of the two kinds just illustrated, and of a few other kinds, we take care of by using special morphophonemic symbols. Other less far-reaching types we handle by making lists; some of the latter are not dealt with in the present section.

2.21. Formulae and Symbols. For our morphophonemic formulae we use all the symbols used for the phonemic transcription, calling them, by analogy, 'vowels,' 'consonants,' etc., and in addition the following nine special symbols: U, O, E, ♯, N, T·, T, S·, a/e. The presence of one or more of these symbols in a graph marks it as a morphophonemic formula instead of as a phonemic transcription, but since it is also necessary to cite formulae which contain no special symbols, we mark formulae with a root-sign (√) whenever necessary to avoid ambiguity.

U and O are WEAK VOWELS. Phonemically they are sometimes, respectively, /u/ and /o/, sometimes zero: thus pmos·e *he walks* and npums·e *I walk* both contain the stem pUmOs·e. The other vowels are STRONG.

E is used finally in the formulae of noun stems where, if no suffix is added, it is phonemically zero, but if a suffix follows it is phonemically /e/: nk·at *my leg* and nk·aten *my legs* both contain k·atE. Note that while E, like U and O, is sometimes zero phonemically, sometimes the vowel written with the equivalent lower-case letter, the conditions for these alternations are quite different for E.

a/e is used finally in the formulae of verb stems where with certain following suffixes it is phonemically /a/, with certain others it is /e/ (see **7**).

♯ is always zero phonemically, but morphophonemically functions as a consonant. Thus the word formula kUšatUsU♯ ends in a consonant, and is phonemically kšatsu *he is glad*, just as nUkUšatUs, ending also in a consonant, is phonemically nkušatus *I'm glad*—in each case a weak vowel before a final consonant is phonemically present.

N, T, T·, and S· are written in morpheme-final position in those morphemes which appear sometimes with phonemic /n t t· s·/ respectively, sometimes with /š č· č š·/ (examples in **2.22** below).

2.22. From Formulae to Phonemics. The morphophonemic formula for a morpheme (or larger element) is set up on the

basis of the different shapes in which that morpheme appears. In order to tell, from a series of formulae for morphemes that occur in a word, the phonemic shape of the basic form of the word, certain rules of transformation have to be known. These are as follows:

1. When the formulae for the separate morphemes have been assembled in proper sequence, the following alterations are made at their borders: if a weak vowel and a strong vowel stand adjacent, the weak vowel is dropped (save for morpheme-initial O; see 3 below). If two weak vowels stand adjacent, one is dropped: if either is O, the resulting single weak vowel is O, otherwise it is U. When a morpheme-final consonant precedes a morpheme-initial consonant, U is inserted ('connective-U'), save in a few cases in which the second consonant is /y w/; these cases have to be listed.

2. Before an inserted U, and before an initial √i/ of a following morpheme (and before initial √y/?), N, T, T·, and S· give √š č č· š·/ respectively; otherwise they give √n t t· s·/. √y/ before √i/, and √w/ before √o/, are replaced by √?/.

3. The resulting morphophonemic notation for a sequence of morphemes is a WORD FORMULA. From such a formula, certain weak vowels are deleted: details in **2.23**.

4. Finally, consonant clusters formed by the deletion of intervening weak vowels are simplified: details in **2.24**.

The result is the base form of the word, subject to further changes in form depending on environment within the utterance.

Examples: √n/ *I* + nUkUtUN *beat in a race* + √a/ *I-him;* after operation one: n-U-nUkUtUN-a; after operation two: nUnUkUtUna; after operation three: √nnuktuna; after operation four: nnuktuna *I beat him in a race.* This example illustrates insertion of U in step one, replacement of N by √n/ in step two, weak-vowel loss in step three, but nothing in step four except the replacement of morphophonemic symbols by phonemic symbols that, in this case, happen to look the same.

√n/ + nUkUtUN + √we/ *intransitive:* after 1: n-U-nUkUtUN-U-we; after 2: nUnUkUtUšUwe; after 3: √nnuktušwe; after 4: nnuktušwe *I win a race.*

pUm *around here* + √y/ *be* + √k/ *they* (which by special morphophonemics changes a preceding U to √i/: 1: pUm-U-y-U-k, with special change pUm-U-y-i-k; 2: pUmU?ik; 3: √pmu?ik; 4: pmu?ik *they are around here.*

kwUtUmoT *to fish* + √ke/ *intransitive* + ⁂ *he, she:* 1: kwUtUmOt-U-ke-⁂; 2: kwUtUmočUke⁂; 3: kwtumočke⁂; 4: kwtumočke *he is out fishing* for those speakers who have /kw/ before a consonant, ktumočke for those who do not.

UnUnU⁂w *man:* 1: UnUnU⁂w; 2: UnUnU⁂w; 3: nunu⁂w; 4: nunu *man.* Compare the plural: UnUnUnU⁂w + √k/ *animate plural* (which does not change a preceding U to √i/): 1: UnUnU⁂w-U-k; 2: UnUnU⁂wUk; 3: nun⁂wuk; 4: nunwuk *men.*

nUt *I* + puk·Uč + √wep/ (the combination means *let go of*) + N *transitive animate* + √a/ *I-him:* 1: nUt-U-pUk·Uč-U-wep-U-N-a; 2: nUtUpUk·UčUwepUna; 3: √ntupk·učwepna; 4: ntupk·učwepna *I let go of him.* With √n/ *I* instead of nUt *I:* 1: n-U-pUk·Uč-U-wep-U-N-a; 2: nUpUk·UčUwepUna; 3: √npuk·čuwepna; 4: npukčuwepna *I let go of him.*

2.23. Weak-Vowel Loss. In word formulae containing two weak vowels and no other vowels (by operations 1 and 2, **2.22**, the vowels are necessarily non-adjacent), the first weak vowel drops, the second stays (U as /u/, O as /o/): tUšU = tšu *where;* Uk·U = k·u *land.*

In all other word formulae a different pattern is involved. A final weak vowel drops. A weak vowel followed by a final consonant or cluster, or by a consonant or cluster which precedes a final weak vowel,

is retained. In the rest of the formula, in any sequence of one or more weak vowels, the odd-numbered ones drop. To the examples already given (**2.22**) may be added: UčUtUmo%y *chipmunk* = čutmo; nUkiwUne *I wallow around* = nkiwne; nUčač·amO *I sneeze* = nčač·am; čač·amO% *he sneezes* = čač·amo.

Morpheme-initial O requires special treatment.[3] If preceded (in a word formula) by a consonant, such an O is retained or dropped according to the principles stated above, but even if it is retained a weak vowel in the next syllable may behave as though the O had dropped: nUtOtUt·Unan *I get it* = either ntott·unan or ntotut·nan; nUtOkUmam *my chief* = either ntokmam or ntokumam. When such an O is initial in the word formula, it is replaced by √wU/ and weak-vowel loss is then regular: OkUma *chief* = wUkUma = wkuma; ʔe ∼ OtUt·UnUman *I acquired it* = ʔe wtut·numan.[4]

2.24. Treatment of Clusters. Except for changes specifically mentioned here, clusters resulting from the loss of weak vowels remain unchanged—that is, each consonantal morphophoneme resolves to the phoneme which is written with the same letter, and % resolves to nothing.

Interconsonantal and postconsonantal final √w y/ drop, except /w/ after /k/ before a consonant for some speakers: piwapUkwE *iron* = piwapuk; pok·Uma%y *plum, peach* = pok·ına; kwUtUmočUke% *he's fishing* = k(w)tumočke.

An obstruent cluster resulting from weak vowel loss, or an obstruent or obstruent cluster which comes to stand next to a non-obstruent consonant by virtue of weak vowel loss, is fortis or lenis as follows: if two obstruents fall together, and the second is fortis, the cluster is fortis. If a fortis spirant (√s· š·/) comes to precede a lenis stop, the cluster is fortis. But a fortis stop followed by a lenis stop gives a lenis cluster. Fortis stops become lenis if flanked by √ʔ/. /sk/ occurs only in fortis variety, save when flanked by /ʔ/, from whatever morphophonemic source. Clusters of more than three obstruents do not occur within a word, and in those of three there is no fortis-lenis contrast. Examples: nUtOtUt·Unan *I get it* = ntotut·nan or ntott·unan; nUpUk·UčUwepUna *I let go of him* = npukčuwepna; nUtUpUk·UčUwépUna *ibid* = ntupk·učwepna; ʔes·UpUn *raccoon* = ʔesp·un; nUkUk·U?wa *I choose him* = nkuk?wa; nUtUkUk·U?wa *ibid* = ntukk·u?wa; nUpisUkonUye *I dress* = npisk·onye; paškUsUkUn *gun* = pašksukun.[5]

A resulting cluster √šks/ appears thus or as /sks/: so the last form given appears also as pasksukun.

When two like obstruents fall together, /pp pp· tt tt· čč čč· kk kk·/ remain unchanged, but √ss ss· šš šš·/ become /s· š·/. In rapid speech, geminate stop clusters may occasionally be reduced to a single fortis stop, but in slow speech this happens only with the spirants. Thus tUtU ∼ tUte *it's ripe* = ttu tte, but was·Us·o% *he shines* = was·o.

In rapid speech √n/ frequently appears before /p/ as /m/, and, less often, before /p·/. Similarly, √m/ appears as /n/ before /t t·/, but not as /n/ (phonetically velar) before /k k·/. In slow speech only the replacement of √np/ by /mp/ occurs: ʔe ∼ nUpot *he died* = ʔe mpot. We indicate this change throughout in the phonemic transcription; the others, being more sporadic, are considered to be covered by this statement and the writing will be mor-

[3] Possibly should read 'root-initial O.' The situation is the result of an irregular alternation in PCA between initial and postconsonantal /we/ and /o/; thus Pot. wkuma *chief* is from PCA wekimaawa, Pot. ntokmam *my chief* from PCA neto(o) kimaama, Pot. ntokumam *my chief* is an analogical (?) reformation.

[4] The symbol ∼ represents word juncture (**3**).

[5] The statement in PPCA 9 is oversimplified, and should be modified to agree with the description above.

phophonemic, e.g. mt·uk *tree*, rather than nt·uk.

√ww/ and √yy/ give /ʔw/ and /ʔy/: wUwapUman *he sees him* = ʔwapman, and hence, by external morphophonemics, (ʔ)wapman.

2.3. Discussion. The pattern of evanescent vowels in present-day Potawatomi arises from a quite similar pattern of loss of PCA short vowels in the development of Potawatomi from PCA. PCA ii, ee, aa, and oo become Potawatomi /i e a o/ respectively; PCA i, e, and a all fall together into Potawatomi /u/, except when they are lost, and PCA o gives Potawatomi /o/ except when it is lost. These losses have not taken place under the special stylistic conditions of singing: ʔesp·un *raccoon*, morphophonemically ʔes·UpUn(U), is sung as ʔes·upunu.

Phonemically, Pot. /o/ from PCA o and from PCA oo are indistinguishable. Morphophonemically, PCA o gives Pot. √O/, and PCA oo gives Pot. √o/. There is no question in this case but that morphophonemically there are two distinct elements. With /u/ the case is different. There should, given no analogical disturbance and no borrowing, be no need to set up both √U/ and √u/, since any PCA i, e, or a should appear under certain rhythmic conditions as /u/, under others as zero. But such disturbing factors have entered the picture. Thus motuy *bottle* (Fr. bouteille) is morphophonemically √motuy/ with stable √u/; cf. the plural motuyun *bottles*. Likewise *my grandchild* (which if it is a loan word comes from an Algonquian source), nos·us·; cf. plural nos·us·uk.

With some manipulation it would be possible to eliminate stable √u/ morphophonemically. Thus *bottle* could be set up as motU%Uy, and the statements which have been made would account for the phonemic shapes in which the element appears; *my grandchild* could be set up as nos·Us·Us·, and the same would be true. That I did not do this (in 1938–9) was due partly to the fact that I knew something of the history of the language, and was guided thereby in my formulation of descriptive morphophonemics for Potawatomi. That, of course, is no real reason; but even though the alternative is logically possible one may question whether much would be gained by it.

3. Morphological Survey. In **2.1** we defined words tentatively as 'stretches before and after which the informant will pause on occasion.' We now supplement that. Certain successive morphemes in an utterance are joined together by internal morphophonemics, others by external morphophonemics. WORD JUNCTURE is any border between successive morphemes between which internal morphophonemics does not apply. A word is a segment between successive word junctures.[6]

This test and the first do not always correlate perfectly. Occasionally an informant will pause at a point where the phonemic and morphophonemic construction of the elements involved does not permit us to say for sure whether internal or external morphophonemics is involved; thus in ʔo k·we *the woman* (morphophonemically √ʔo/ and √k·we/). Occasionally no pause has been observed at a point where clearly external morphophonemics are involved: nkuko? ns·a *I kill him quickly* (nUkUko?, nUs·a; if the joining were internal, one would get a connective U: *nUkUko?UnUs·a = *nkuko?nus·a). When the two tests do not

[6] Harris (among other places, in Lg. 21.285 [1945]) shows how it is often convenient to describe internal and external morphophonemics at the same time: in each particular statement, if a symbol, say ~, representing word juncture is present in the environment which calls for a certain morphophonemic replacement, the change is external, if not, it is internal. The Potawatomi case is an interesting inversion of this: instead of defining internal versus external morphophonemics in terms of word juncture, it is almost unavoidably convenient to define word juncture in terms of the two different kinds of morphophonemics.

agree, we follow whichever one calls for postulation of word juncture. In some neither test clearly demands word juncture, and yet we posit it on the (more or less vague) analogy of similar forms, providing our statements of morphophonemics would not be thereby disrupted.

In this morphological survey we describe the patterns by which morphemes participate in larger forms, not larger than a single word save in a few cases of close-knit phrases which are more easily presented here than with the rest of syntax.[7]

3.1. Participation of Morphemes in Bound Forms.

3.11. Primary Derivation. A ROOT + a MEDIAL + a FINAL = a DERIVED PRIMARY STEM. There may be more than a single root, or medial; some stems contain no root or no medial, but both root and medial are not lacking. By postulating zero finals, but not otherwise, one can say that there is always one final. There are also MONOMORPHEMIC primary stems.

Stems are either NOMINAL or VERBAL; this depends on the final for those stems which contain one.

Noun stems fall into gender classes, ANIMATE and INANIMATE. Noun stems which contain a root are INDEPENDENT; those which contain no root are DEPENDENT. Independent stems occur in both UNPOSSESSED and POSSESSED themes (**3.13**); dependent stems occur only in the latter.

Verb stems fall into four categories depending on the final: TRANSITIVE ANIMATE, which occur in inflected forms showing person and number of animate subject and animate object, TRANSITIVE INANIMATE, with animate subject and inanimate object, ANIMATE INTRANSITIVE, with only an animate subject, and INANIMATE INTRANSITIVE, with only an inanimate subject.

Hereafter the following abbreviations will be used: *nad*, *nai*, *nid*, *nii* for nouns, respectively animate dependent, animate independent, inanimate dependent, and inanimate independent; *ta*, *ti*, *ai*, *ii* for the four classes of verb stems.

Examples: Root plus final: √n/ + √apo/ = √napo/ *drink*, *nii*. Root plus medial plus final: pUm + √aẗ/ + Us = pUmatUs *live*, *ai*. Medial plus final: √os·/ + √*zero*/ = √os·/ *father*, *nad*.

3.12. Secondary Derivation. A stem + a final = a SECONDARY STEM. To a considerable extent the same finals occur in primary stems and in secondary stems, but there are differences. Thus a noun stem may underlie a noun stem: √natwe/ *snake* + √s·/ = √natwes·/ *little snake*. A noun stem may underly a verb stem: Us·ema(⁂y) *tobacco* + √k·e/ = Us·emak·e *prepare tobacco*. A verb stem may underlie a noun stem: pUmUn *have as a pet*, *ta* + akUn = pUmUnakUn *a pet*. And a verb stem may underlie a verb stem: wapUm *see*, *ta* + √ay/ *passive* = wapUmay *be seen*, *ai*.

In one case the pattern of secondary derivation is different: a DERIVATIONAL PREFIX + a noun stem = a derived stem: O + √os·/ *father*, *nad* = O?os· *have a father*, *ai*. (The insertion of /?/ is also irregular.)

3.13. Possessed Themes. The unpossessed theme of a noun stem is homonymous with it: Us·ema(⁂y) *tobacco*, *nai*, singular /s·ema/. The possessed themes have the following structure: PERSONAL PREFIX + noun stem (+ POSSESSIVE DERIVATIVE SUFFIX) (+ PERSONAL SUFFIX). Dependent stems do not take the possessive derivative suffix; some independent stems always take

[7] From this point on Potawatomi was easy; with rare exceptions it was possible simply to follow the traditional analysis of other central Algonquian languages, translating examples into Potawatomi. The debt to Leonard Bloomfield is apparent throughout. Particularly helpful in the description of Potawatomi was his Algonquian (consulted in manuscript form 1938–9; now published: Harry Hoijer and others, Linguistic Structures of Native America, New York, 1946, pp. 85–129 [Viking Fund Publications in Anthropology, No. 6]).

it, some never, and some optionally (this requires lists). In any case, the possessive derivative suffix need not be regarded as a morpheme in its own right: it is a mechanical product, where it occurs, of the other elements involved, and carries no separate meaning. A personal suffix occurs if the possessor, indicated also by the choice of prefix, is plural. For the person-number categories, which recur elsewhere in the language, it is convenient to have a set of abbreviations: *1* first person singular (always animate), *2* second person singular (animate), *3* third person singular animate, *0* third singular inanimate, *3′* obviative animate, *0′* obviative inanimate, *12* first person plural animate inclusive (of person or persons addressed), *15* first person plural animate exclusive, *25* second person plural animate, *35* third person plural animate, *05* third person plural inanimate. Of these, *3*, *0*, and *3′* are represented indifferently by the form for *3* in the case of the possessor of a possessed theme, and *35* and *05* likewise by the form for *35*.

Examples: √n/ *1* + √os·/ *father* + √nan/ *plural possessor including 1* = nos·Unan *our* (*15*) *father* (singular nos·nan). √k/ *2* + √os·/ + √wa/ *plural possessor excluding 1* = kos·Uwa *your* (*25*) *father* (singular kos·wa).

3.2. Participation of Bound Forms in Free Forms.

3.21. Noun Inflection. A noun theme + one or two PARADIGMATIC SUFFIXES = a NOUN (free form). We use the same terms for the completed nouns and for the paradigmatic suffixes present in them: SINGULAR (*3*, *0*; suffix √*zero*/), PLURAL (*35*, *05*), PLURAL VOCATIVE, and, for animate themes only, OBVIATIVE (*3′*) and SECOND OBVIATIVE (*3″*; the obviative paradigmatic suffix occurring twice in succession). There is also a SINGULAR VOCATIVE, homonymous with the singular except in a few kinship terms, where it is highly irregular.

Examples: nos·Unan *our* (*15*) *father* + √*zero*/ = nos·nan *our* (*15*) *father* (*3*). nos·Unan + √k/ *animate plural* = nos·nanuk *our* (*15*) *fathers* (*35*).

Obviation is a syntactical device reflected in noun and verb morphology. If two animate third persons are mentioned in the same short context, only one is in third person form; the other (if it is not first or second person) is obviative. If there are three, the third may be in second obviative. The meaning of the obviative morpheme(s) is, roughly: *this third person is less important than the one not marked by an obviative morpheme, or marked by one less occurrence of it.*[8]

3.22. Nouns Underlying Particles. A noun theme (+ the obviative paradigmatic suffix) + the LOCATIVE SUFFIX = a LOCATIVE PARTICLE (free form). Examples: čik *near, by* ~ Utop·UwUn *table* + √k/ *locative* = čik top·wunuk *by the table*. √čiman *canoe* + √k/ = čimanuk *in the canoe*. wUtUk·-Uk·om *his* (*3*) *kettle* (*nai*) + √n/ *obviative* + √k/ = wtukk·omnuk *in his* (*3*) *kettle* (*3′*).

Some locative particles contain, before the locative suffix, an element which does not recur elsewhere: nam pyek *underwater*. (Possibly √pye/ *water* is a suppletive alternant of √nUpi/ [a root] *water, be wet.*)

3.23. Preterital Nouns. A possessed noun theme with paradigmatic suffixes may be followed further by a PRETERITAL SUFFIX; the total is a noun (free form). The meaning is that the possessive relation no longer exists at the time of speaking, due to some-

[8] The usual description of obviation begins with meaning: the less important of two third person animate referents is put in the obviative. The statement in the text seems more in keeping with our general habit of starting with form. Note that in some cases there is no freedom of choice as to which referent is to be obviative, which not: possessed nouns may show third person possessor, obviative possessed, but not vice versa; *ti* verbs have form for *3* actor, *3′* object, but not for *3′-3*. Obviation for inanimates occurs in Pot. only in the participials of *ii* verbs.

thing which has befallen the possessed object or person: √nos·/ *my father* + √*zero*/ *singular* + pUn = nosp·un *my deceased father*; nUčimanUm *my canoe* + √*zero*/ + pUn = nčimanmupun *the canoe I used to have (now lost, stolen, or destroyed)*.

3.24. Independent Order of Verbs. A personal prefix + a verb stem + paradigmatic suffixes = a verb in INDICATIVE, NEGATIVE, or DUBITATIVE mode.[9] The indicative and negative modes are used for statements and for some questions in ordinary conversation (other questions use an equational construction with a participle). The paradigmatic suffixes distinguish the three modes; in addition, together with the personal prefixes, they delimit the person and number category of subject and, if transitive, object, and may contain a preterital element (cf. **3.23**). The dubitative mode includes not only finite forms but also a participle.

Personal prefixes occur except in third person intransitive forms; therefore *ii* verbs, which have only third person forms, never appear with personal prefixes. Example (indicative): √n/ + wapUm *see, ta* + √a/ *1–3* = nwapma *I see him*.

Between the personal prefix and the verb stem (in indicative and negative) may occur certain particles called PREVERBS, separated from each other and from the verb stem by word juncture. A personal prefix is in such a case placed before the first preverb, with internal morphophonemics: √n/ + √tep/ *get to, succeed in* ~ nUs· *kill, ta* + √a/ = ntep ns·a *I get to kill him*.

3.25. Imperative Order of Verbs. A verb stem + a paradigmatic suffix = a verb in IMPERATIVE or PROHIBITIVE mode. These always have second person subject, so that *ii* verbs lack these forms. The suffixes specify the mode and delimit person and number of subject and, if any, object: √pya/ *come, ai* + √n/ *imperative 2* = pyan *come here (2)!*; √pya/ + √k·un/ *prohibitive 2* = pyak·un *don't come here (2)!*

3.26. The Conjunct Order of Verbs. A verb stem + certain paradigmatic suffixes = a verb in CONJUNCT or PARTICIPIAL mode. The conjunct, used alone, expresses a wish: √pya/ *come, ai* + √t/ *3* = pyat *if he would only come!* It is also used in certain types of dependent clauses; but most often it appears subordinated to a preverb /ʔe/, as the most customary formation in story-telling and other hearsay narration: ʔe ~ ki *past time* ~ √pya/ + √t/ = ʔe ki pyat *he came*; with pwa *not* before the stem, ʔe ki pwa pyat *he didn't come*.

The participial has suffixes different from those of the conjunct only in third person plural subject forms, but in addition is marked by a vowel-change morpheme √*ablaut*/ ('initial change'), simultaneous with the beginning of the stem. In participial and conjunct, as with indicative and negative, certain preverbs may precede the stem; in the participial mode, if preverbs precede, than the √*ablaut*/ morpheme is simultaneous with the first of the preverbs instead of with the stem: √ki/ *past time* + √*ablaut*/ ~ √pya/ + √t/ = ka pyat *the one who came*.

Like the indicative, the conjunct (and participial?) have special endings for preterit.

3.3. Close-Knit Phrases. The use of preverbs with verbs has been mentioned (**3.24, 3.26**).

A few bare roots are used as first members of NOUN COMPOUNDS: word juncture separates the members, paradigmatic and personal suffixes come after the second member, personal prefixes before the first. Thus √wap/ *white* ~ kUno·w *eagle* + √*zero*/ =

[9] Following Bloomfield, loc. cit. 42 (but he classes imperative and prohibitive as separate orders, where we put them together). The dubitative turned up in Pot. only towards the end of my last field trip, and I do not have sufficient forms to warrant discussion beyond that in this section.

wap kno *white eagle;* pUpUšk *black* (?) ~ mU?we(*y) *wolf* + √*zero*/ = ppušk m?we *lion.*

There is a similar formation with locative particles: čik pyek *on the shore* (i.e., *alongside of the water*); čik wikwamuk *by the house;* k·wuč yukwan *on top;* k·wuč top·wunuk *on the table;* wču yukwan *towards something;* the first element of this last example reappears with √*ablaut*/ in weč ks·unyak *towards where it is cold* (from which English Wisconsin), a participial of an *ii* verb.

3.4. Summary: Classes of Morphemes. The classes of morphemes found in Potawatomi are: roots (**3.11, 3.3**), medials (**3.11**), finals (**3.11,2**), monomorphemic primary stems (**3.11**), one derivational prefix (**3.13**), personal prefixes (**3.13, 3.24**), paradigmatic suffixes (**3.21, 3.24–6**), locative suffix (**3.22, 3.3**), preterital suffix (**3.23, 4–6**), initial change (**3.26**), and monomorphemic particles, including preverbs (**3.24,6**). The possessive derivative suffix (**3.13**) is omitted from this list, as not constituting a morpheme in its own right.

COMANCHE BABY LANGUAGE

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The Comanche language[1] reveals an unusually rich and formalized vocabulary of special baby words which were used in teaching the child to speak. Their use began when the child was old enough to understand, at about one year according to informants, and dropped off as the child matured and learned the normal, adult locutions at the age of 3 to 4. If a child persisted in using these words after the age of 5 or so, it would be laughed at and ridiculed for its babyish ways. Today English holds sway and these baby words no longer function actively, although children in those families or households where there are older persons who speak only Comanche may have some knowledge of them. So of necessity these data were recorded from the lips of adult speakers, most of whom, however, maintain a lively memory of the baby forms.

The following list was checked with eight informants and is probably exhaustive. Where known, the adult form or derivation is given in brackets after the translation of the baby word or words.

ʔáʔh, ʔáx, ʔáʔhA *something nasty or dirty; feces, urine, penis, a smell; warning to get away from something dirty; I have wet, dirtied myself; command for baby to defecate.*

ʔaʔhá·ʔ *no good!* (said to baby).

The next two forms are used in speaking to and by older children. They are derived from the baby words, but with regular verbal suffixes.

ʔáʔhi·kwhA *go off and defecate!*

ʔáʔhI, ʔáʔhinĩʔ *I have dirtied myself.*

ʔaná·, ʔanó· *it hurts!* (pointing to place); *sore place, cut; command to child to get away from thing or place where it might get hurt.*

ʔasí·, ʔaʔsí· *rectum; feces, defecation; anything nasty.*

ʔeroró·ʔ, ʔeró·ʔ, ʔetó·ʔ *white man* [táivo·ʔ *white man*].

ʔĩtî·ʔ, ʔĩtĩtĩtî·ʔ *it's hot!* (command to stay away); *fire, lamp, lightning, sun, flashlight, firewood; anything that will burn* [ʔĩrî·ʔ, ʔĩrĩrĩrî·ʔ].

ʔĩ·kéta? *don't; let me alone.*

ʔî· exclamation of surprise (women or babies).

hî·, hĩ·kéta? as above; also used by adults; *don't* (scared).

ʔĩcî·ʔ, ʔĩcĩcĩcî·ʔ *cover me, dress me, I'm cold; it's cold; command to stay away from something cold.* [ʔĩcî· used only as an exclamation].

ʔĩnî·ʔ *insect; any small noxious animal, to babies when one wants child to be afraid of something or leave it alone; bug, snake, scorpion, ant, person;* exclamation of fright. [ʔînĩ·].

ʔúʔtU *give it to me!* [ʔú'tU].

ʔum·áʔ *good! nice! beautiful;* said by mother when she wants to comb child's hair, dress it; said to attract child's attention to clothes, toy; *anything bright or colorful that attracts the child: red, yellow, blue.*

ʔumó·ʔ, mó·ʔ *cattle, cow, bull* [onomatopoeia].

papá·ʔ *I want a drink;* water [pá· *water*].

papó·ʔ, popó·ʔ *dog.*

pepé·ʔ *ball* (it was said by one informant that this word was used only by girls as boys didn't play with balls) [naʔ sihpé·ʔ].

pikí·ʔ *pig* [English; pig, piggy].

tatá·ʔ *something to eat, especially meat; I want, give me . . . ; eat!* [tí'kap *food, meat*].

tató·ʔ *shoes, moccasins* [ta prefix meaning *foot:* tàhtokó·ʔ *toe*].

táʔsi *vagina* (táʔsip to baby when bouncing it on the knees. A personal name: *one who has a vagina*) [táʔI].

[1] The material for this paper was gathered on a field trip sponsored by Columbia University to the Comanche Indians living near Indiahoma, Oklahoma during the summer of 1940.

tutú·ʔ *automobile, train, anything that whistles* [onomatopoeia].

kaká·ʔ, kaká *bird; head louse.*

kaní·ʔ *house, tipi* [kánhI].

kokó·ʔ *fruit, candy, cookies; any snack between meals;* give me. . . .

cikí·ʔ *chicken* [English].

cicí·ʔ *breast, bottle, milk, I want to be suckled!* [pícip *milk, breast*].

cíʔci, píciʔ mother to child when she is going to nurse it.

mamá·ʔ *horse;* said by child when it wants to be carried on someone's back.

mamá·ʔ *mother* [English].

mukí·ʔ, mu·kí·ʔ *giant, owl, bogey* (to scare child) [related to mú·pic, the legendary *giant owl*].

mumú·ʔ used to scare child; child's exclamation of fright; *the dark, thunder; cow.*

naná·ʔ *it might hurt, get away; blood, sore, hurt;* said if baby doesn't feel well; if it is bitten or hurt by another child [see ʔaná·].

nīnî·ʔ *doll; baby; little ones of animals; little. . . .*

nīnīcí·ʔ *dear little doll, baby* [related to the pronominal prefix, nī-, *I, me*].

waʔó·ʔ, waʔó·ʔ *cat* [adult: wáʔo·].

ʔîʔsI, nīʔîsik *cover me!* [adult: ʔihîkI, nīʔihîkI].

wîʔasI *penis* [adult: wîʔA (wîʔasiʔ male personal name *one who has a penis*)].

The sI here, and also in the baby word for *vagina,* táʔsI, is probably derived from the diminutive suffix, **-cI.**

RELATIONSHIP TERMS

piá *mother* (the regular adult word; there is no special baby word in common use).

pipiá said by some babies.

ʔapî·ʔ *father, father's brother, father's haic (friend)* [ʔápÎ address form; ʔáhpīʔ reference form].

ʔatá·ʔ *mother's brother, husband of mother's friend* [ʔárhA address form; ʔáraʔ reference form].

pací·ʔ *older sister* [pácI address form; páciʔ reference form].

namí·ʔ *younger sister* [námI address form; námiʔ reference form].

taká·ʔ *sibling* [tákA address form; tákaʔ reference form].

tamí·ʔ *younger brother* [támI address form; tamiʔ reference form].

paví·ʔ *older brother* [pávI address form; páviʔ reference form].

pahá·ʔ *father's sister* [páhA address form; páhaʔ reference form].

kakú·ʔ *grandmother* [*mother's mother* is the adult meaning; kákU address form; kákuʔ reference form].

tokó·ʔ, totó·ʔ *grandfather,* sometimes *father* (this form used by a younger child) [*mother's father* is the adult meaning; tókO address form; tókoʔ reference form].

The following terms may also be used if the child is old enough to make the distinction: kīnú·ʔ *father's father* [kînU address form; kînuʔ reference form]; hucí·ʔ *father's mother* [húcI address form; húciʔ reference form].

These kinship terms, other than those used for *father, mother,* and *grandparents,* probably appear relatively later in the child's vocabulary. Just how far they are extended to include those relatives normally subsumed under them in adult usage is not certain, but they may be taken to apply primarily to those persons designated above or their surrogates. It is interesting to note that the maternal grandparental terms are those first used for all grandparents. This suggests matrilocal residence, or at least more intimate contact with the mother's parents than with the father's.

In addition to the above list of formal baby words several characteristics of Comanche children's speech may be mentioned. There is a tendency for children to add the diminutive-endearing suffix, -cI and the related -sI to words; e.g., haicí·ʔ for haíc *friend.* Reduplication,[2] as might be inferred

[2] Kroeber mentions this tendency to reduplicate in the speech of a Zuni child of 23 months whom he observed. A. L. Kroeber, The Speech of a Zuni Child, AA 18.529–34; the only published account of the speech development of a primitive child.

from the above list, is another feature: tĭtĭi is said by little girls for tĭ·i, *girl friend;* pipiá for piá *mother*, etc. Although reduplication is present in Comanche as a grammatical process, it performs no ostensible grammatical function in the child's speech. Various phonemic substitutions are made; p for kw as pĭhI for kwĭhĭ *wife;* pánA for kwánA *odor, smell;* also i for ĭ as tiás for tĭas, etc. One person carries the personal name, pitá·si? *one who always defecates*, a "baby name", where a p is substituted for the kw in kwítA *defecate!*, and the suffix -sI is also added. These substitutions are not regular, but are commonly made by children learning to speak. Somewhat more regular is the substitution of t for r (see examples in the word list).

Several facts become apparent upon study of the above list of baby words. First, it must be recognized that these function not as single, simple words, but as whole sentences with many different, albeit related, possible meanings (exclamatory, imperative, declarative, interrogative) which are elucidated by gestures, intonations, and the context of the situation. They are really sentence-words. Phonetically the baby words are simple: there are no preaspirated consonants; the sonant plus h does not appear; whispered vowels and the defective phonemes, r and v, are rare and their appearance is probably late in the speech development of the child. The x phoneme and the long m are unique to the baby vocabulary.

Reduplication is evident and appears to be especially common in those words generic to the baby language and basic to it. The baby word phonetic pattern of two syllables with the second vowel accented, long, and usually ending in a glottal stop occurs in most of the examples. Words derived from the adult vocabulary are put into this pattern, as may be seen from the relationship terms. Presumably it is in this phonetic form that words are first presented to the child. This seems consistent with our practice of carefully enunciating words when teaching them to a child.

Language development poses several problems for the genetic psychologist and anthropologist as well as the linguist. Some baby words are to be found in all languages, written and unwritten,[3] though not commonly as formalized and in such abundance as in Comanche. In all these baby words two facts claim attention: the universality of reduplication, and the use of simple phonemes, especially the labials p, b, m, the stops t, d, k, g, and cardinal vowels. The use of simpler phonemes is probably explained in terms of the baby's limited ability to manipulate his speech organs, since learning to speak even one's native tongue involves the induction of an intricate set of motor habits and is a maturational process comparable to acquiring such other skills as walking or skipping. But the problem of reduplication is not so easy of solution. Jespersen has this to say, "It is simpler and more natural to refer these reduplications to the pleasure always felt in repeating the same muscular action until one is tired."[4] But this seems an oversimple explanation. A natural tendency to reduplicate may perhaps be granted and seems to be supported by the oft-made observation of the infant's babbling repetition of the same sound. This proclivity seems to have been tacitly recognized by adults and conventionalized by them in reduplicated baby words.[5]

[3] The following references list baby words: Wayne Dennis, The Hopi Child, 1940, p. 35; also words from Shungopavi, Zuni, and Cochiti (personal correspondence); A. F. Chamberlain, Notes on Indian Child-Language, AA, o. s., 3.237–41 (1890), 6.321–2 (1893); Edward Sapir, Nootka Baby Words, IJAL 5.118–9; Leo J. Frachtenberg, Abnormal Types of Speech in Quileute, IJAL, 1.295–9; A. L. Kroeber, op. cit.; Otto Jespersen, Language, Book II, The Child, pp. 103–88 (1923).

[4] Jespersen, op. cit., p. 109.

[5] Margaret Mead, Growing Up in New Guinea, p. 36 ff., discusses the child's speech education in Manus, and mentions the endless repetition back and forth between adult and baby of the same monosyllable. She says, "This random affection for repetitiousness makes an excellent atmosphere in which the child acquires facility in speech". p. 37.

As the growth of speech facility parallels to a marked degree the maturation of the child's intellectual capacities, one might ask how comparative speech phenomena reflect this. Does it take longer for a primitive child who has to learn a highly complex language, such as many North American Indian languages, to gain control of his language than, say, a Chinese or American child?[6] At what age is the primitive child capable of making the subtle analogical formations[7] that many primitive languages require?

Some knowledge of children's speech development and baby words seems essential for the anthropologist or psychologist interested in problems of personality development and character structure. From the vocabulary itself one can form some idea of the child's world in a given culture; what objects and affects impinge upon it. Discipline and attitudes are reflected, as in Comanche where feces, urine and the genitalia and feelings of disgust are equated, and where there are words used to frighten the child, admonish it, and control its movements. It seems likely that conscious speech training might be correlated with later educational procedures and attitudes towards children. This seems true for the Comanche where the position of children was high as was general on the Plains. It also seems important to know how long baby words are used and, if they are reverted to later in life, under what conditions.[8] The extension of kinship terms, the child's induction into their use, and the varying importance of the different relatives or classes of relatives[9] to the child are all relevant.

[6] Clyde Kluckhohn, who has made extensive observations on Navaho children, feels that the Navaho child, as compared with the English-speaking child of the same age, is somewhat retarded in acquiring equal facility with his extremely difficult language.

[7] See Leonard Bloomfield, Language, pp. 275 ff. (1933), and Chapter X of Edgar H. Sturtevant, An Introduction to Linguistic Science (1947).

[8] Persistence in using baby talk was an important symptom of personality disturbance among Pilaga children where in extreme cases, those of half or full orphans, baby talk persists until the ninth year. In the most severe cases of personality disturbances a pattern of phonetic substitution is rigidly followed through and at times results in serious phonetic distortion. Jules and Zunia Henry, Speech Disturbances in Pilaga Children, Am. Jr. Orthopsychiatry, 10.362-9 (1940).

[9] H. Ian Hogbin, Experiments in Civilization, London, 1939: Learning-Kinship Terms, pp. 38-42, has made an admirable start in this direction.

SIGNIFICANCE OF ASPIRATION IN NAVAHO

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1. Introduction
2. Augmentative x
   2.1. Definition of sounds
   2.2. Examples
   2.3. Augmented -tsxis, -tskis *whip*
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3. Initial versus final aspiration
   3.1. Final h and initial x
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   3.4. Distinction between x- and -h
4. Stem final h
5. Diversity of change
6. Summary

1. At the outset the recorder of an unwritten language does not know what the sounds of the new language are, yet he has to record them. Since he knows nothing about them, he does not know which of those closely related are distinctive, yet if he works on a phonemic basis, he wants to record only such sounds. He cannot realize his most important aim therefore until he has analyzed a great many forms so as to include all that is distinctive, to eliminate all that is unnecessary. The best he can do is to keep his problems constantly in mind, even after he thinks he has determined his phonemic system. Aspiration in Navaho illustrates this as well as other points important not only in the analysis of this language but significant in establishing genetic relationships as well.

2.1. The sounds represented as t, k, ts, and tc may be described as phonemes and we may take care of the values tye, thye, txye, two, thwo, txwo and the like by definition. If however we conclude that tx and kx are never distinct we neglect one phase of the language and leave no clue to our successors. I have shown how important the gradations in aspiration have become in Navaho so that t has sometimes become x, k has become x and x has become k.[1] These changes have come about by emphasis on the aspiration and slighting so as to eliminate the initial (perhaps the original or at least earlier) sound.

In addition to this there is in Navaho a grammatical device in which the clusters tx, sx, tsx, tcx, łx, zγ, dzγ and possibly others indicate an augmentative. A more forceful action, a state exaggerated in size or quantity, or a pejorative may be expressed by aspirating the voiceless stem initial so strongly as to form a consonant cluster. Correspondingly the voiced initial clusters with γ, as zγ and dzγ, but such voiced clusters are rare.

2.2. Examples are given in pairs, with the regular form preceding the augmented form: -tih *cover, wrap,* -txih *protect, conceal;* -sał *move like a feather,* -sxał *heavy object* (as person) *moves like a feather;* -zi *become static, silent, motionless,* -zγi *be dazed, paralyzed, deadened;*[2] -si *make numb,* -sxi *paralyze, deaden;*[3] sǫ' star, sxǫ' *a so-and-so star;* -sǫs *gleam like copper, be pink,* -sxǫs *glitter like a red star;* dzą·di *here,* dzγą·di *here in this so-and-so place;* dził *mountain,* dzγił *a so-and-so mountain;* -tsa·z *grow big,* -tsxa·z *grow very large;* -tsoh *be yellow,* -tsxoh *be very yellow;* -tcah *cry,* -tcxah *scream;* tcą·' *excrement* (usual household word), tcxą·' *excrement* (vulgar); -tcih *be red,*

[1] Linguistic Diversity IJAL 11.161–2 (1945).

[2] The principal parts of the verbs of this pair do not correspond in form as closely as the other pairs, but they are definitely related (see 2.3).

[3] This verb is the causative of -zi, -zγi since -ł-z > -s- and -ł-zγ- > -sx.

-tcxih *be very red, blush;* -tcin *have odor, exude odor,* -tcxin *have strong or unpleasant odor;* tcin *dirt,* tcxin *parts of person subject to sorcery;* -tcį́· *nose,* -tcxį́· *muzzle;* -tcǫ' *bad,* -tcxǫ' *wicked, essentially bad;* -tcǫ·ɬ *bad, evil, spoil, ruin,* -tcxǫ·ɬ *soil, pollute, discredit;* 'ańtcǫ́'į́ *one's personal effects* (one's junk), 'antcxǫ́'į́ *personal effects subject to sorcery;* -ła·ɬ *hate,* -ɬxa·ɬ (not -ɬ-xa·ɬ) *be exasperated.*

2.3. Among some speakers there has been a change from strongly aspirated k (kx) to x and, in a few cases, from x to k or kx. These are individual pronunciations of a single sound. When however x-augment occurs, these speakers get a consonant cluster tsk rather than tsx and this happened to the stem -tsxis or -tskis *jerk forcefully a long, narrow, flexible object;* hence, *whip.* I have not found a stem -tsis with a corresponding meaning. There is a stem -tsis which means *absorb, saturate* and another which means *tremble,* but these are distinct from the augmented -tsxis. The principal parts of all augmented forms correspond with those of the regular forms except for the stem initial, that is, the vowels, vowel changes with lengthening (as -tsxis progressive and -tsxá·s inceptive), tone and closing consonant are the same. This similarity provides a test for the augment.

2.4. I have laid emphasis on one part of a sound rather than another as a possible cause of origin (2.1), but there may be an historical cause: x or k of the consonant cluster may be a survival of an old suffix. Final -h of the stem is as important as h in any other position since it may point to relationship with final -γ or other palatal, for instance, Navaho -tcah *cry, weep;* Chipewyan -tcaγ *cry.*

Comparison of Navaho with California Athapaskan suggests the incorporation of suffixes in the verb-stem. Instances of the process are even demonstrable in Navaho as tɬă·h *Lefty, the left-handed-one* from tɬah-í (-tɬah *awkward, lefthanded;* -í nominalizing suffix).[4] Such forms may be considered as contractions. Hupa has a suffix -ił which, suffixed to the present, forms a VERB CONTINUOUS OVER SPACE[5] which must be equivalent to Navaho PROGRESSIVE. It is no accident therefore that a large number of progressive stems have -ɬ as the final consonant.

Hupa has an augmentative suffix -kyo[6] (Mattole -gw).[7] Navaho has complex rules of contraction involving assimilation, saturation and extension. A simple application of these rules would show that -tcah could assimilate one palatal at least without change, but the form -tcah ostensibly already had one palatal as shown by its final -h (weakened from -γ, k or g). Hence if another were involved it would be in evidence somewhere since -tcah has reached the saturation point for the assimilation of palatals (or of a particular palatal). Consequently -tcah-kyo>-tcxah.

Here then the meaning which was easy to ascertain gives us: two possible reasons for a peculiar form like -tskis *jerk ropelike object, vigorously, whip, switch,* with -tsxis more common; a reason for the unusual x stem-initial without the -ɬ- classifier; a clue to the phonetic and functional composition of the verb stem; an explanation of genetic relationship in the loss of a suffix and the consequent change of the stem.

Father Berard in his first conversation with me years ago showed his realization of the presence of a phonemic x and to some extent recorded tx, tsx and tcx; but since he did not differentiate the non-functional aspiration from the consonant cluster or analyze the use of x, his texts are wavering and inconsistent.

[4] Cp. H. Hoijer, IJAL 11.125 (1945).

[5] P. E. Goddard, Athapaskan (Hupa) (Handbook of American Indian Languages, BBAE 40.123).

[6] Ibid. p. 107.

[7] Fang-Kuei Li, Mattole, An Athabaskan Language, p. 137 (University of Chicago, 1930).

The Sapir-Hoijer texts[8] do not differentiate the regular forms from the augmentatives because they treat both types of initial as a single phoneme.

3. There is some question about the initial occurrence of h- or x-. Sapir's informants seemed indifferent whether one or the other should be used; mine were strongly opposed to a sound as weak as h- for an initial, whether used with vowel -a-, -e-, -i- or -o-. They preferred x- for initial, -h for final in an element or stem.[9] It is possible that we may not be able to determine which is correct. Doubtless now both are, but if we leave the way open for new information to be secured from analysis and comparison with other Athapaskan and with other individual Navaho speakers we may ultimately find a reason for the differences.

It is important to determine whether we have x or h in any position because not only may x or h be used as a simple means of indicating the analysis of forms, but also if the forms are not the same, the elements probably have a different origin. For instance, xi- the prefix of REPETITIVE MOTION is related to yi- REPETITIVE ASPECT, but is not identical with it; to ɣi- which has the same meaning as xi- but results from contraction with yet another yi- (that is, xi-yi-yi-); and to si-*harm*, but the final aspiration of a prefix like dah- contracts properly with other prefixes to produce different results even though they may have a yi- form.

A few examples follow: dah- *suspended, on top of* (with static verbs), *forward, forth* (with verbs of motion) can assimilate yi-PROGRESSIVE, yi-CONTINUATIVE and yi-S3 OBJECT.

dahi'á·ɬ *suspended round object moves progressively* (dah-*suspended;* yi-*prog.*,[10] -'á·ɬ *round object moves prog.*).

dahi'a·h *round object is starting motion forward* (dah-*forward;* yi-*cont.;* -'a·h *round object moves pres.*).

dahidi·'a·h *hang it (hat) up* (dah-*suspended;* yi-*S3 obj.;* di-*start from;* yi-*cont.;* yi-*pause;* -n-*S2 subj.;* -'a·h *round object moves inc. cess.*).[11]

3.1. Compare with these forms the following in which -h of dah- may be contracted with x- of xi- *repetitive of motion:* daxidéɣɬ *he* (or *they dual*) *had started forth repeatedly moving a load; they had loaded* (*unloaded*) (dah-*forth;* xi-*rep. motion;* di-*start from;* si-*pf.;* -ni-*completive;* -ɣɬ *load moves pf.*).

In the next forms -h does not assimilate to following y- because yi·z- and yiz- consist of so many elements that they do not readily tolerate further contraction and remain intelligible.

dahyi·z'ą *he repeatedly laid a round object up* (*on it*)*; he repeatedly moved it a round object* (*so as*) *to suspend; he put them up one by one* (dah-*suspended;* yi-*S3 obj.;* yi-*rep. aspect;* si-*pf.* > -z *in this setting;* -'ą *round obj. moves pf.*).

dahdayiz'ą *each one held a round object; they* (*each one*) *moved it a round obj. suspended* (dah-*suspended;* da-*pl.;* yi-*S3 obj.;* si-*pf.;* -'ą *round obj. is, static*).

One may hear dahi·z'ą *he repeatedly moved a round object up* and dahdaiz'ą *each one held it* (*round obj.*) but the purists, usually old conservatives, consider these forms wrong. They say the young men (and of course the non-purists) do not show

[8] Navaho Texts (Linguistic Society of America, Iowa City, 1942).

[9] Navaho Phonology. pp. 12, 15–7, 19–24 (University of New Mexico Press, 1945).

[10] The following abbreviations are used: 1, 2, 3, 4 persons; S3-3 the first number refers to the subject, the second to the object; cess. cessative; cont. continuative; inc. inceptive; obj. object; opt. optative; pf. perfective; pl. plural; pres. present; prog. progressive; rep. repetitive; S singular; subj. subject.

[11] Cp. Navaho Phonology. p. 39. But note that Hoijer's use of *augment* is phonemic whereas mine is morphological.

proper understanding of the repetitive and often of other yi- (xi-) forms and are indifferent to the distinctions. The significant point of this discussion and these examples is the fact that xi-REPETITIVE OF ACTION breaks down in certain settings to yi-, γi- and perhaps even to si-, but yi-s3 OBJECT, yi-PROGRESSIVE, yi-CONTINUATIVE and yi-REPETITIVE OF ASPECT do not. The points at which these changes occur (by contraction), since they are distinctive, furnish the tests for each prefix.

3.2. Still another problem of final h of a prefix is its relationship to s, and I have the following apparently alternant forms.

dahi'a·h *it a round obj. is moving forward; it round obj. suspended starts motion* (dah-*suspended;* yi-*cont.;* -'a·h *round obj. moves pres.*).

dahí'a·h, dasí'a·h *you are moving it suspended round obj.; you are carrying it* (dah-*suspended;* yi-*S3 obj.;* yi-*cont.;* -n-*S2 subj.;* -'a·h *round obj. moves pres.*).

dahi'a·h, dahyi'a·h, dasa'a·h *he is carrying it round obj.* (dah-*suspended;* yi-*S3 obj.;* yi-*cont.;* -'a·h *round obj. moves pres.*).

I happen to have these examples as paradigm alternants; unfortunately they are not in context. I therefore am unable to check them semantically at the moment but I suggest that si- forms, which appear in the dual as well as singular but not in the plural, belong to the si- paradigm rather than to the dah- one. There is a prefix si- which means *harm, danger, difficulty, disintegration, hopelessness, fatality* used with verbs of *killing, injuring, disintegrating, undoing.* This prefix is distinct from the si-perfective since it occurs in the progressive and continuative as well as in the si-perfective where it markedly affects the forms. This prefix si-*harm* also breaks down to yi-, usually however in different ways and in different forms from xi-REPETITIVE OF ACTION, and possibly from dah-yi-CONTINUATIVE. When contracting with other prefixes there seems to be a struggle between h-s>h and h-s>s and in some cases one dominates, in others, the other, and there may even be cases where both are allowed.

Although I have seen examples in texts other than mine and although Hoijer generalizes that -h before s- becomes s (-h-s->-s-), I have not found it.[11] I get dahsitį *he lies on top* rather than dasitį. Similarly, I get do·'ahsoxodo·bé·jdah *it is hopeless,* in both cases with -h of dah- and 'ah- definitely aspirated. The example dacdi·yá *he paused starting forth* (my translation) of Sapir-Hoijer Navaho Texts 132:28 I analyze as follows: dah- *forward;* -j- for dji- *S4 subject* with dah-j->dac- since h unvoices a voiced fricative with which it comes in contact; di- *start from* (frequently dah-di- are used with verbs of motion); yi-*prog.;* yi-*pause;* di-yi-yi- > di·-; -yá *one person goes* (PF).

The assimilation of s to preceding h is another debatable question which needs more attention especially since, once more, different prefixes are involved and may perhaps be differentiated. It seems, for instance, that dah-si-*harm* > dahi-, but dah-si-PF. > dahsi-.

3.3. My experience suggests that phonetic laws which apply to prefixes apply also to the relationship between prefix and stem. This is shown by such forms as xonoh-są́ *you 2 are wise* (STATIC) with -oh-ya->-ohsą́; nohsoł from noh-yoł *you 2 are driving a few animals along* (PROG.); dohsį́·ł *you two will eat it* (-γį́·ł *eat* PROG.); γo·hsį·h *stand up you* INC. CESS. OPT. (-zį·h *stand*). These forms demonstrate the instability of stem initials y, γ and z; stem initials such as these furnish specific genetic clues.

3.4. Since the final and initial aspirates do not behave alike and since their distinction may be determined by the principles of contraction which work out in a regular way, it seems to me that we have here good evidence that my informants

have reason for insisting on a distinction between x-initial and -h final.

4. The problem is more direct when the final aspiration of verb-stems is concerned. A mass of material may be assembled to indicate that processes occurred by which -γ and perhaps other palatals were lightened to become -x and -h although they sometimes seem to have become ʾ as the stems were developed by one tribe and another.[12] I believe that reliable recordings of these languages and comparison with Navaho will show whence various portions of the Navaho vocabulary derive. At least certain processes and changes point to the west, others outstandingly to the north. At any rate, the final consonant of the Navaho stem is often -h, probably not -x, except when exaggerated by the x-speakers.[13]

5. The fact that the x-speakers exaggerate all aspirate sounds should warn us once more of a well-established fact, that changes may have come about as tribes with their speech peculiarities moved away from others, but that the old forms may have been restored, sometimes even by different processes, and are not necessarily survivals.

6. This paper aims to point out the possibility of error in a premature determination of phonemes, illustrating important morphological devices which may be missed by considering certain sounds the same before sufficiently extensive analyses are made. Navaho interpreters, some of whom have analytic ability, object to considering the strongly aspirated initial sound the same as the final aspirate which is very lightly articulated. The use of x after a consonant to form a consonant cluster of the type Cx was discussed as a hitherto unrecognized grammatical device to express augmentation (except incidentally by William Morgan).[14] The discussion of this device is an example of the overlapping of processes which often result in similar forms in Navaho—augmentation of the stem initial may be due to emphasis on aspiration or to incorporation of a suffix in the stem.

Verbs show different phonetic patterns depending upon the relative effect of one prefix on another, a prefix ending in -h dominates certain initials with which it comes in contact, whereas x-initial shows different effects. These facts suggest that phonetic -h and x- indicate different phonemes; in my opinion dependent on causes other than their position before a particular vowel. All of these factors, as well as the presence or absence of stem final -h are of value for purposes of reconstructing forms and determining genetic relationships.

[12] IJAL 11.165 (1945).
[13] IJAL 11.159 (1945).

[14] Young, Robert W. and Morgan, William. The Navaho Language, p. 142 (Education Division, U. S. Indian Service, Phoenix, Arizona, 1943).

STEMS AND AFFIXES IN TEPEHUA NUMERALS[1]

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1. Numerical stems
2. Prefixes occurring with numerical stems
3. Suffix occurring with numerical stems

1. Numerical stems.

The numbers *1–39* are bound stems. Here they are illustrated with the prefix laga- which is one of the prefixes listed under section **2.**

The stems for the numbers *1–10* are single morphemes: *1* lagatam; *2* lagaťuy; *3* lagaťutu; *4* lagaťāťī; *5* lagakīs; *6* lagačāxan; *7* lagatuhun; *8* lagacahin; *9* laganahāc; *10* lagakāw.

The stems for the numbers *11–19* are based on -kāw *ten*. Their semantic value is equal to the sum of the constituent forms: *11* lagakāwtam (*10* + *1*); *12* lagakāwťuy (*10* + *2*); *13* lagakāwťutu (*10* + 3); *14* lagakāwťāťī (*10* + *4*); *15* lagakāwkīs (*10* + *5*); *16* lagakāwčāxan (*10* + *6*); *17* lagakāwtuhun (*10* + *7*); *18* lagakāwcahin (*10* + *8*); *19* lagakāwnahāc (*10* + *9*).

The stems for the numbers *20–39* are based on -ṗuxam *twenty: 20* lagaṗuxam; *21* lagaṗuxamtam (*20* + *1*); *22* lagaṗuxamťuy (*20* + *2*); *23* lagaṗuxamťutu (*20* + *3*); *24* lagaṗuxamťāťī (*20* + *4*); *25* lagaṗuxamkīs (*20* + *5*); *26* lagaṗuxamčāxan (*20* + *6*); *27* lagaṗuxamtuhun (*20* + *7*); *28* lagaṗuxamcahin (*20* + *8*); *29* lagaṗuxamnahāc (*20* + *9*); *30* lagaṗuxamkāw (*20* + *10*); *31* lagaṗuxamkāwtam (*20* + *10* + *1*); *32* lagaṗuxamkāwťuy (*20* + *10* + *2*); *33* lagaṗuxamkāwťutu (*20* + *10* + *3*); *34* lagaṗuxamkāwťāťī (*20* + *10* + *4*); *35* lagaṗuxamkāwkīs (*20* + *10* + *5*); *36* lagaṗuxamkāwčāxan (*20* + *10* + *6*); *37* lagaṗuxamkāwtuhun (*20* + *10* + *7*); *38* lagaṗuxamkāwcahin (*20* + *10* + *8*); *39* lagaṗuxamkāwnahāc (*20* + *10* + *9*).

The numbers between *40* and *100* are based on -ṗuxam *twenty* preceded by ťu- *two* (morpheme alternant of -ťuy as given above), ťutum- *three* (morpheme alternant of -ťutu as given above), ťāťī- *four*, and kīs- *five*:[2] *40* tuṗuxam (*2* × *20*); *41* ťuṗuxamtam (*2* × *20* + *1*); *45* ťuṗuxamkīs (*2* × *20* + *5*); *50* tuṗuxamkāw (*2* × *20* + *10*);[3] *51* ťuṗuxamkāwtam (*2* × *20* + *10* + *1*); *55* ťuṗuxamkāwkīs (*2* × *20* + *10* + 5); *60* ťutumṗuxam (*3* × *20*); *70* ťutumṗuxamkāw (*3* × *20* + *10*); *80* ťāťīṗuxam (*4* × *20*); *90* ťāťīṗuxamkāw (*4* × *20* + *10*); *100* kīsṗuxam[4] (*5* × *20*); *400* lagaťāťīkīsṗuxam (*4* × [*5* × *20*]); *500* lagakīskīsṗuxam (*5* × [*5* × 20]); *1000* lagakāw sīyentus (*10* × *100*).

2. Certain prefixes may occur with numerical stems. These depend upon the thing enumerated, whether an object or abstract entity, and indicate certain things regarding it. The following are a few of the common prefixes.

2.1. Prefixes occurring with numbers which precede the noun which they modify.

laga-, general prefix: lagatam kawayuh *one horse* (kawayuh *horse*); lagatam xanta *one flower* (xanta *flower*).

[1] The information for this paper was received from various informants during several field trips over the past four years to the Tepehua town of Huehuetla, Hidalgo, Mexico, and was done under the auspices of the Summer Institute of Linguistics. The phonemes of the Tepehua language are: p, ṗ, t, ť, k, ḳ, g, ġ, č, č̓, s, x, c, ċ, l, lh, m, n, w, y, h, a, ā, i, ī, u, ū.

[2] Sometimes the number for four reales is used and to it is added the amount necessary to make the desired number. E.g. lagťāťīʔā lagaṗuxam *50* + *20* or *70*.

[3] Although the Tepehua Indians use constantly the smaller numbers, the larger ones from 50 on (except the reales) are gradually being replaced by their Spanish equivalents.

[4] The Tepehuas also use the Spanish ciento, making it tam sīyentus *one hundred*.

ʔagx-, refers to complete, separate things: ʔagxt̓uy ʔalhikī *two pieces of paper* (ʔalhikī *paper*); ʔagxt̓āt̓ī xāpūh *four pieces of soap* (xāpūh *soap*).

pūč'ā-, used for pieces put together: pūč'āt̓uy ƙiw *two pieces of board nailed together* (ƙiw *board*).

gan-, used for round slender things: gankāw ƙiw *ten trees* (ƙiw *tree*); gankīs maka? *five fingers* (maka? *finger*).

tīh-, used for things different from others as to color and class: tīht̓utu pumpu? *three distinct pieces of cloth* (pumpu? *cloth*); tīhkīs čiwīntī *five different words* (čiwīntī *word*).

2.2. Prefixes occurring in special numerical forms without a noun object.

kīlhmā- *group of people;* kīlhmākīs *five groups of people.*

ƙaklh- *pieces;* ƙaklht̓āt̓ī *four pieces;* ƙaklhtam *one piece.*

mix-, used to count days: mixt̓utu *three days (from now)*; mixtuhun *seven days (from now).* (There are other special words for *days,* incorporating the numerical stems, e.g. t̓uxam *day after tomorrow.*)

pumaga-, indicates that the things enumerated are sections of a whole round thing: pumagatam *one section* (as of an orange).

pīs-, used for bundles or bunches tied up: pīstam *one bunch* (as of grass or lettuce).

galh-, used for things that approximate a hill of growing things: galht̓āt̓ī *four hills* (as of corn or coffee).

pūġin-, used for counting multiples of three cuartillas of corn: pūġint̓utu *twelve cuartillas of corn* (-t̓utu *three*).

2.3. Prefixes forming numbers which occur with or without a modified noun.

lag-, used for counting pesos or reales (the old monetary system still used among the Tepehuas): lagt̓uy *two reales;* lagkāw pīxūh *ten pesos.* However, when only one or two pesos are to be mentioned, they occur without the prefix lag-. E.g., tam pīxūh *one peso.* The prefix lag- is also used in certain forms that are accompanied by the third person prefix x-. E.g., xlagt̓uy *its second time.*

pumā-, used to number persons or animals: pumāt̓uy *two persons;* pumākīs kawayuh *five horses* (kawayuh *horse*).

3. The suffix -īn ~ -ūn ∽ -ān is added to the numbers when referring to each thing mentioned. (The alternants are determined by the morphemes they follow.) Examples are: lagatamīn *one each;* lagat̓īyūn *two each* (the -u- of -t̓uy changes to -ī-); lagat̓utūn *three each;* lagat̓āt̓īn *four each;* lagakīsīn *five each;* lagačāxanān *six each;* lagatuhunān *seven each;* lagacahinān *eight each;* laganahācīn *nine each;* lagakāwīn *ten each;* lagap̓uxamān *twenty each.*

ALTERNATE-MORA TIMING IN SHIPIBO

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1. Introduction
2. Basis for timing
3. Extent of timing
4. Application of timing

1. In Shipibo[1] there are a number of morphemes that are lexically meaningless. There are other morphemes that do have lexical meaning and to which one of these is attached. These lexically meaningless morphemes have two alternate forms apiece. There are certain well defined conditions under which one or the other of these alternate forms occurs in a given word. It is the purpose of this paper to illustrate this conditioned alternation with the most frequently used of these lexically meaningless morphemes, and to show what practical linguistic value this phenomenon has.

2.1. The conditions under which the alternation takes place will be clearly seen if the sequence: stem, plus r'ib *repeated action*, plus **a** alternating with **i** (lexically meaningless morpheme), plus kī *completed action*, is used.[2]

Note the following lists of words; the alternate-mora timing vowel is printed in small capitals:

A.	kar'ibAkī	*went again*
	hën'īribɪkī	*hid again*
	y'ëmīcëribAkī	*stole again*
B.	pir'ibAkī	*ate again*
	ar'ibAkī	*did it again*
C.	ë'iⁿribɪkī	*saw it again*
	rë'aribɪkī	*it croaked again*
	ën'aⁿribɪkī	*knew again*
	rak'īribɪkī	*was afraid again*
D.	y'ënëribɪkī	*commanded again*
	yën'ëribɪkī	*worked again*
E.	bër'ibAkī	*went away again*
	b'ëëribɪkī	*healed again*
	t'īīribɪkī	*worked again*
	t'īaribɪkī	*bothered again*

2.2 In list A, the alternation of A to I and back again can be easily seen. Counting the number of vowels occurring before A in each case, and comparing it with the number of vowels occurring before I, it is evident that there is an even number of vowels before A and an odd number before I. That it is the number of vowels that conditions the alternation of A with I is more clearly proven in lists B, C, and D. In list B, the number of consonants changes, but the number of vowels before the alternating morpheme remains an even number and there is no change in the form of the

[1] Shipibo, Dialect of Padre Márquez, is spoken in the political unit of that name along the banks of the Ucayali River from the mouth of the Pisqui to that of the Aguaytía. It is mutually intelligible with other dialects of Shipibo, and with Conibo and Shetebo, other Panoan "languages". The data for this paper were obtained during three years of residence in Roaboya, Peru, within the years 1942 to 1946 inclusive. I am indebted to Kenneth L. Pike for suggestions regarding presentation.

[2] Phonemic symbols used in the transcription of Shipibo are: consonants p, t, k; m, n; s, š, ʂ, h (ʂ is a retroflexed alveopalatal fricative); affricated stops c, č (alveolar and alveopalatal); voiced bilabial affricated stop b; voiced retroflexed alveopalatal affricated flap r; vowels a, i, ɪ, ë (the last two, back unrounded, high and mid); each vowel is the center of a phonetic syllable; semivowels functioning as consonants y, w (equal to i and ë respectively); phonemic length marked by : following vowel; phonemic nasalization marked by exponent ⁿ after vowel (nasalized long vowels marked ⁿ: after vowel); phonemic stress marked by ' before vowel.

morpheme. In list C, the number of vowels is now an odd number, and the A has changed to I. But even with changes in the number of consonants, there is no further change in the form of the alternating morpheme. In list D, the number of vowels before the alternating morpheme is still an odd number, and the I remains I, even with a change in the placement of stress.

2.3. List E has two words which need special attention. It will be noticed that the second and third words contain sequences of two identical vowels; each sequence comprises a single phonetically long vowel. Comparison with the fourth word shows a phonetically long vowel to be equal to two short vowels in conditioning the form of the alternating morpheme. This is the chief reason why they are treated here as clusters of identical vowel phonemes.[3] Each short vowel phoneme constitutes one unit of length, a mora; each sequence of two identical vowel phonemes constitutes two moras. In the remainder of this paper, the mora will be considered the unit which conditions the choice of each particular alternate of the alternate-mora timing morpheme.

2.4. In summary, we would simply describe A alternating with I as an alternate-mora timing morpheme. It has no lexical meaning and obligatorily occurs after the morpheme r'ib *repeated action*. A occurs after an even number of moras, and I occurs after an odd number of moras.

[3] Note also the contrast with sequences of diverse vowels, such as īa. There remains a problem of stress placement and syllabicity still to be accounted for, however, before this phonemic interpretation is certain. Meanwhile, the analysis of the alternate-mora timing is stated here in terms of moras (whether phonetic or phonemic) rather than of separate vowels, so that the conclusion need not be affected by further data on this point.

[4] These statements may be extended and modified to cover the other alternate-mora timing morphemes.

3.1. Once a simple sequence has been used to determine that the number of preceding moras conditions the alternation of A with I, it is necessary to determine where the counting of moras begins in more complex sequences. It has been assumed above that in the sequence: stem, plus r'ib, plus A alternating with I, plus kī, the counting of moras begins with the first mora of the stem. An extension of this assumption will be made in the sections below.

3.2. Taking the sequence ar'ibakī *did it again*, the insertion of a one-mora morpheme between the stem and r'ib results in a change from A to I as shown by 'amaribikī *made him do it again*. Further insertion of another one-mora morpheme results in I changing back to A as shown by *'amarīsribakī > 'amarīsibakī *merely made him do it again*. Furthermore, two one-mora morphemes are equal to one two-mora morpheme as shown by 'apariribakī *did it first again*.

3.3. The reduplication of a one-mora stem, and the consequent addition of the alternate-mora timing morpheme shows that the counting begins with the first stem. The contrast is shown by *pir'īsribikī > pir'īsibikī *merely ate again* and *pip'irīsribakī > pip'irīsibakī *was merely eating away again*. The addition of a mora in reduplicating the stem results in the change from I to A.

3.4. The sequence yak'aribikī *sat down again* may have one of a class of morphemes prefixed to the stem, resulting in a sequence like r'īyakaribakī *sat at the front again*. The prefixation of a mora to the stem results in changing the form of the timing morpheme from I to A.

3.5. The sequence š'atīribikī *cut again* may also have one of a class of morphemes prefixed to the stem, resulting in a hypothetical sequence like *m'išatīribakī, constructed on the same pattern as the sequence

in the paragraph above. However, the first mora of the stem is reduced, and the spoken sequence is actually m'ĭštīribɪkī *cut his hand again*. The reduction of a mora in the stem changes the form of the timing morpheme back again to I, thus showing that the counting is based upon the number of moras physically present in the sequence.

3.6. Morphemes suffixed after the alternate-mora timing morpheme have nothing to do with conditioning its form. Comparison of ar'ibarīskī *merely did it again* with ar'ibakī *did it again*, shows that the addition of two moras after the timing morpheme has the same effect on the timing as the addition of one, i.e. no effect. But taking r'īs and inserting it between the stem and r'ib, results in ar'īsribɪkī > ar'īsibɪkī *merely did it again*. The mora has been applied where it is included in the counting; therefore, A changes to I.

3.7. The sequence of moras that conditions the alternate-mora timing may be defined as extending from and including prefixed morphemes (if any be present), up through stems and inserted morphemes, and up to and including r'ib. This sequence may be conveniently called a timing sequence. Every spoken mora within the timing sequence has a part in conditioning the form of the alternate-mora timing morpheme. A timing sequence containing an odd number of moras is followed by I; a timing sequence containing an even number of moras is followed by A.[4]

4.1. The timing morpheme, A alternating with I, is the most frequent of five such morphemes used after verb and noun stems. Thus it and the other timing morphemes are very useful as a criterion for word length.[5]

4.2. Occasionally, also, the investigator finds a fairly long sequence of morphemes which leaves him in doubt as to whether it constitutes one or two words, since two potentially free forms are included—the first of them a verb stem and the second a verb stem or possibly a morpheme of some other type. When, in these long, doubtful, morpheme sequences it can be demonstrated that the choice of the particular alternate of an alternate-mora timing morpheme is conditioned by the number of moras in the entire long sequence preceding it, the investigator assumes he is dealing with a single long word. Stress phenomena appear to substantiate this conclusion.

[5] Two main criteria for word length are (1) that phonemic stress occurs on either the first or second syllable of a word; and (2) that the beginning of a word is the beginning of a timing sequence. The end of a word is beyond the end of the timing sequence.

MATAKO OF THE GRAN CHACO

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1. Introduction
2. Vowels
3. Consonants
4. Compounds
5. Verb plurals
6. Causatives
7. Indicative vs. imperative
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11. Miscellaneous particles
12. Sex gender
13. Noun plurals
14. Diminutive and augmentative
15. Adjective verb
16. Independent personal pronouns
17. Affixed personal pronouns
18. Syntax

1. Matako is one of the languages of the Gran Chaco of South America, spoken in the central part of this region. The language is genetically related either to the languages of the Guaykuruan linguistic stock or to those of the Guaranian linguistic stock. Abundant traces of male language and female language survive in the Matako language of today. The sounds, structure, and a considerable part of the vocabulary of Matako are similar to those of Guaraní. The eight distinct vowels of Matako occur short only, just as the Guaraní vowels occur short only. There is in Matako no nasalized series of vowels. There appear to be something like 24 consonants in Matako. The verb is noncommittal as to tense, tense being marked by a temporal adverb. A curious third person passive has developed in Matako, in which passiveness, person, and number are marked by a single prefixed syllable. Some nouns form their plural by the addition of -s; other nouns require other plural formations. The ordinary verb form is a complete sentence, and contains a subjective personal pronominal prefix, or this plus perhaps an objective personal pronominal suffix. Various sets of personal pronominal affixes are required, the uses of which have not been sufficiently investigated. The count is decimal. The most usual word order is svo, in which formula s stands for subject, v for verb, o for object.[1]

2. Matako vowels are: a, ə, ʌ, o, u, ä, e, i. The diphthongs are: au, ai, oi. The pitch phenomena in the Guaykuruan languages were recognized some 125 years ago by Dobrizhoffer.[2] The Spanish-Matako vocabulary at the end of the book by Pelleschi shows that Matako has mostly ult accent, partly penult accent. The work by Lehmann-Nitsche confirms this, and shows that the Matako language has mostly ult accent, as the Guaraní language has.

3. Consonants.

Larynx: ' h
Back-of-tongue: k kw k' kh x xw
Middle-of-tongue: y n^y(?)
Front-of-tongue: t t' ᴛ s ɬ l tc n
Lips: p p' ᴘ fw (= xw?) m

The presence of kh in the back-of-tongue articulatory position leaves one to suspect that perhaps the sounds which Hunt distinguishes from t and p, here printed as small caps ᴛ and ᴘ may be, respectively, th, ph. Hunt nowhere adequately describes what he means by ᴛ, but merely refers to ᴛ as a "peculiar" t. The matter is still open to question because the sound ɬ is written by

[1] For a more detailed description, see: R. J. Hunt and B. A. Tompkins, Mataco Grammar, Universidad Nacional de Tucumán, Publicación 271 (Tucumán, 1940).

[2] Martin Dobrizhoffer, An Account of the Abipones (2 vols., London, 1822).

Hunt as th. The sound of tc in Matako is unaspirated, being evidently exactly the same as the ch of Spanish.

4. In compounding, the first position member is the modifier; the second position member is the modified. There is not a compound which can not be resolved into a bibase. The first member of a compound may have the force of being a mere indefinitizer. For instance, ka- *thing*, gives the force of Latin quasi *as if, as it were.* Thus ka-nek *spoon* (*quasi mussel shell*); ka-tcati *father-in-law* (*quasi grandfather*). The second members of compounds, -uk *tree*, -ax *fruit*, -tcat *grove*, come after a first member denoting the botanical species. Thus fway-uk *white-algarrobo tree;* fway-ax *white-algarrobo fruit* (in this instance, the fruit is a bean); fway-tcat *white-algarrobo grove.*

Before an interrogative word or an interrogative sentence, a questioning twist is given by placing the particle ha. Thus ha wux *is it large?*

5. A verb theme is pluralized by adding to it -hen or -en.

6. The common devices for marking causatives are by prefixing yam- or by suffixing -yen or -kat (-at, -it). Thus yam-is *to make to be good;* is-yen *to make to be good;* yel-kat *to tire* (from yel *to be tired*), nom-at *to cause to wake up* (from nom *to become awake*).

7. The only formally marked modes of the Matako language are the indicative and imperative. The imperative is marked by the second person present indicative. The intransitive singular has the same form as the indicative, but the intransitive plural has a special form in -ai. Thus lən *kill!*, lən-ai *kill ye!* The transitive imperative takes the same personal pronominal suffixes that the indicative does. The negative imperative precedes the imperative positive with yex *do not,* a negative adverb not otherwise used. Thus yex le-lən *do not kill him!* Nor can I find any trace in Matako of modes other than the indicative and the imperative. When mere uncertainty is expressed, elak *maybe,* is added before or after the indicative: *he killed him maybe.*

8. The verb without any particle added is present, past or future: o-yek *I go, I went, I shall go.* The principal tense particles are: pante *long ago;* te *some time ago;* naxi *a short time ago;* mate *just now;* ne *already;* tat *now;* la, lame *bye-and-bye.*

9. The ordinary forms of the Matako passive simply have the theme of the transitive verb preceded in the singular by o-, which not only means *he is,* but carries the power to passivize the verb theme to which it is prefixed. Thus, o-lən *he is killed;* o-lən-hen *they are killed* (but lən, the transitive verb meaning *to kill*).

10. Miscellaneous suffixes.

-łi PRESENT PARTICIPLE: tcum-łi *working.*

-yax, -et ABSTRACTIVE: is-yax *goodness* (from is *he is good*); łam-et *word.*

-wet LOCATIONAL: ma-wet *bed* (lit. *layery*).

-tca INSTRUMENTAL: tcumet-tca *instrument.*

-sax, -ek, -tca, -wo AGENTIVE: kan-sax *deceiver;* łen-ek *maker;* wahat-tca *fisherman;* fwai-wo *white-algarrobo fruit gatherer.*

-ek PERFECT PASSIVE PARTICIPLE: wen-ek *seen;* lən-ek *killed.*

The adverbial addition which changes the meaning of a verb the least is that which merely intensifies the meaning of the verb: yek-ła-pa *to grow upward* (in which -ła- merely intensifies the preceding theme).

11. Miscellaneous particles.

In Matako there are two ways to say *yes:* eya and hu. tek, which means *no* as the answer to a question, also occurs instead of the usual wax *not:* o-tcax wax *I do not bring water* (tek o-wen *I do not see*). One should notice that tek seems to occur before the verb, wax after it.

Locational adverbs answer the question where: kana *here;* kani *there;* wetciye *on the other side of the river;* totaho *near;* toxwe *far;* tcowex *in the middle;* fwuti *behind;* taytce *in front;* tcufwuy *underneath;* ałotax *outside (in the country)*; kapa *up, above.*

Temporal adverbs answer the question when. Some are the tense formers. Temporal adverbs more complicated than the mere statement of time when are: pex *always;* ne *already;* kamax *still;* hapfwalana *today* (lit. *day-this*). tcikfwala *tomorrow* (lit. *another-day*); honaxaxi *yesterday.*

Modal adverbs answer the question how: wet *in vain.*

Examples illustrating the use of prepositions are: tcufwi mesa *under the-table;* itpe lataj *on a horse* (lit. *on the large-pet*).

The conjunction, linking words or sentences together: wet *and;* wok *or.* Thus, Pedro wet Santiago *Peter and James.* mat (lit. *now*) has considerable standardization as a conjunction meaning *but.*

Rarely a demonstrative, hape (also appearing in various other forms and apparently meaning *that*), is employed with the force of a definite article before a noun. Thus hap wax *the water.* When *the* refers to the fact that a mention has already been made, a demonstrative pa is sometimes employed and follows the noun with which it goes: atsina pa *the* (already referred to) *woman.*

The ordinary demonstratives are na *this;* ta *that.* The word ta is also used as a relatival: hino ta yek *the man who goes;* wela ta inupa *the moon which rises.*

Interrogative pronoun: atsi *who?*

There are several words in the Matako language which can well be termed numeroids, since they refer to inexact number, or can be taken as so doing: tek *few.*

The system of enumeration of Matako is based on ten, that is, the count is decimal. The forms of the count which are most used are evidently those of the cardinal series: wayhała *1;* takw *2;* naxtufwayeł *3;* tufwantes *4;* okwe-wayhała *5.* In addition to the formation of the ordinal numerals, one encounters tcun *first;* małen *last.*

12. The Matako language does not ordinarily have any expression of sex gender in any of its forms, but if one desires to be explicit, a male animal can be distinguished by adding hino *male, man* after the name of the animal, a female animal by adding atsina *female, woman* after the name of the animal. Tribal names likewise have sex designation of the person added, if it is desired to be explicit, but in the instance of one tribal name, masculine and feminine designations appear to be separate words: ahatai *White man,* sulux *White woman.*

13. The Matako noun and most nominoid forms distinguish the singular and the biplural, that is, the Matako plural denotes two or more. The language has no dual. A few nouns have the plural the same as the singular. The various plural formations and examples of them are:

1. ZERO SINGULAR; -S PLURAL: pule *cloud* (in the singular, the noun also means *heaven, sky*); pules *clouds.*

2. -X SINGULAR; -S PLURAL: o-fwu-x *my finger;* o-fwu-s *my fingers.*

3. ZERO SINGULAR; -i PLURAL: kala *leg;* kala-i *legs.*

4. -X SINGULAR; -i PLURAL (the vowel before -x appearing as e, before -i appearing as a): o-naye-x *my garden;* o-naya-i *my gardens.*

5. ZERO SINGULAR; -ye PLURAL: o-kwe *my hand;* o-kwe-ye *my hands.*

6. ZERO SINGULAR; -l PLURAL: hino *man;* hino-l *men.*

7. ZERO SINGULAR; -eł PLURAL: kates *star,* kates-eł *stars.*

8. ZERO SINGULAR; -lis PLURAL: o-ko *my mother;* o-ko-lis *my mothers.*

9. -k SINGULAR; zero PLURAL: o-łete-k *head;* o-łete- *my heads.*

10. ZERO SINGULAR; ZERO PLURAL. Although Hunt says expressly that some nouns

have singular and biplural the same, he gives no example of such occurrence.

11. ZERO SINGULAR; -łayes (lit. *companions*) PLURAL. This kind of plural formation is on an exact par with the plural formation accomplished in the Quechua language by adding -kuna to form, if plural formation is desired, the plural of all nouns. mula *mule;* mula-łayes *mules.*

14. The ordinary augmentative of the language is marked by adding -tax, the ordinary diminutive, by adding -fwax. A number of domestic animals, for instance, *horse* and *cow* are distinguished by throwing certain nouns designating native animals into the augmentative. Examples are: wet-tax *large house;* (ye)la-tax *horse* (lit. *large tapir*); wase-tax *cow* (lit. *large animal of the deer species*); wet-fwax *small house;* hino-fwax *little man.*

15. The Matako adjective is an intransitive verb and takes a special set of personal pronominal prefixes. The plural is made by adding -hen or -en to the verb theme. An example is: ya-is *I am good,* but na-is-en *we are good;* a-is *you are good,* a-is-en *ye are good;* is *he is good,* is-en *they are good.* The negative of this adjective verb has a complex formation: ya-k-ni-is-a *I am not good;* a-k-ni-is-a *you are not good;* ni-is-a *he is not good.*

16. There are four different sets of independent personal pronouns, which are employed for emphasis and therefore can be omitted altogether. It will be noticed that only in the first person singular and plural do the sets differ. Apparently the first two sets belonged anciently to the male language, the last two to the female language. Thus, am *you,* amel *ye,* łam *he,* łamel *they* throughout; but yam *I,* namel *we* for the first set; yam *I,* yamel *we* (*of the family*) for the second set; ołam *I,* ołamel *we* for the third set; nołam *I,* nołamel *we* for the fourth set.

17. There are two sets of personal pronouns prefixed to the verb, both of these having subjective meaning. The first set goes back to the old male language (ya- *I;* a- *you;* zero *he*); the second set to the old female language (o- *I;* le- *you;* ye-, i-, zero *he*).

Personal pronouns prefixed to the noun mark possession. Here again there appear to be two sets, the first set going back to the old male language (ya-, i- *my;* a- *your;* la-, le- *his*); the second to the old female language (o- *my;* a- *your;* la-, le- *his*).

There is no disjunctive for the verb. But there is a disjunctive for the noun, corresponding to what is called the disjunctive in a language such as English. One has to say in Matako, if the suppressed noun is of inanimate gender, *my thing;* if the suppressed noun is of animate gender, *my pet* or the like. Thus: ya-ka *mine* (lit. *my thing*), a-ka *yours,* la-ka *his;* but compare i-la *mine* (lit. *my pet*), a-la *yours,* le-la *his.*

Personal pronouns suffixed to the verb are mostly of objective meaning, but I have at least one example of a prefix on the verb being used with objective force. Objective forms noted are: -ye, -no *me;* -ame *you;* -e *him;* -ehen *them.* The example of the objective personal pronominal prefix is yex le-łon *do not kill him!*

18. A prominent word order is to give the verb emphasis by putting it first. Thus yek hino *the man goes* (lit. *goes the man*). But one can also say: hino yek. A frequent order of words found in Matako is subject-verb-object. Thus atsina itcate wet *the woman reaches the house.*

When the adjective verb has non-predicative use, it comes after the noun with which it is construed, the relatival ta coming between the two. Thus: hino ta wux *the large man* (lit. *the man who is large*). Even though the adjective has what may appear to be perfect passive participle meaning, this same construction is maintained. Thus: mak ta tay *a lost thing.*

SOUTH GREENLANDIC PARADIGMS

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1. The problem
2. The noun paradigm
3. Other substantives
4. Verb endings
4.1. Mode-signs
5. Agglutination
6. Order of elements
7. Underlying elements

1. Eskimo[1] nouns have three numbers and eight cases, and can occur with or without pronominal possessives. Since the pronominal system distinguishes three numbers and four persons, the total number of forms implied in the full paradigm is the product of $3 \times 8 \times (1 + 12)$ or 312. Verbs have seven modes, inflected for person and number of the subject and the object; though certain combinations of subject and object do not occur, the implied endings approach a thousand. It is clear that any mechanical listing of paradigmatic endings would mount up to a formidable mass of items, very difficult to grasp or deal with. One naturally looks for some way of reducing them to a smaller number of elements.

Now the outstanding structural trait of Eskimo is the extensive use it makes of a relatively simple agglutinative technique of suffixation. Words are sometimes quite long, being made up of a stem and several suffixes, but are nevertheless easily analyzable into their component parts. If the paradigmatic endings were formed in the same way, they would be simple combinations of one to five elements, representing the separate inflectional categories; the total list of components would be just 22 (3 for number, 8 for case, 4 for person, 7 for mode). However, while such a group of elements can be analyzed out of the endings, their use involves fusion and irregularity to an extent that makes it impossible to predict the actual forms. Two things can be done. First, by taking advantage of consistencies and parallelisms that apply to large sections of a paradigm, we can greatly simplify the paradigmatic lists. And second, along with analyzing out component elements, we can observe the ways in which the combinations follow or depart from the agglutinative structure.

2. In dealing with the noun of South Greenlandic Eskimo, the reduction of the paradigm can be based on two facts. First, there is the circumstance that all but one of six adverbial case suffixes are added mechanically (following usual Eskimo phonology). And second, there are fairly systematic coalescences of form bringing together the singular and plural in some instances, the plural and dual in others. The net result is that the noun endings can be presented as a list of a little over a hundred in place of the 312 that are theoretically involved.

In the tables, we use the abbreviations s., p., d. for the numbers; also s-p. and p-d. for groupings. The persons are shown by numbers, including 4. for the 'recurrent' and 0. (zero) for indicating the absence of pronominal element. Abbreviations are used for the absolute, allative, ablative, perlative and relative cases.

Additional cases are simply added, like allative -mut (post-possessive -nut): ablative -mit (-nit), instrumental -mik (-nik), locative -mi (-ni); or are added regularly to absolute forms: similative -tut (p. -tut, d. -γtut).

[1] The present study is based entirely on material contained in S. Kleinschmidt, Grammatik der Groenlaendischen Sprache (G. Reimer, Berlin 1851). A brief outline of the language, omitting paradigmatic lists, is my South Greenlandic (Eskimo) in Linguistic Structures of Native America, VFPA 6.30–54 (New York, 1946).

Phonological notes: Most of the endings, in fact all but the four beginning in a γ-cluster (-γtik, -γsi, -γput, -γpuk), are added to the 'plural base' of the noun.[2] Some take the plural base consistently: plural -t, dual -k, relative -p and relative and adverbial those beginning in consonants (like ∼si) in all cases other than these.

The suffixes shown with a wavy hyphen are of the eliding type, before which theme final k or q is lost except that q combines with following prevocalic γ to give γ. The suffixes marked by straight hyphen retain a preceding k or q in spirantized form. Both types of suffixes retain a preceding t, either by assimilating it to the following consonant or by inserting a vowel; the t changes to ʂ if the spirantizing suffix begins with a vowel. An insert vowel, u before -p and otherwise i, is also used after any retained consonant and a suffix consisting of just a consonant. Some other details: Prevocalic t changes to s after i (but not ɪ), as in ∼isiγut from ∼i-t-iγut. Spirants change to stops when they come to stand second in a consonant cluster; for example, compare ∼vut and -γput in the paradigm itself. A k, generally spirantized before another consonant, is retained if the following consonant is k (including one changed from γ) and converted into ŋ if the following consonant is a nasal; for example, in the paradigm itself, ∼kka from either -t-γa or -k-γa, ∼ŋmiŋnut from -k-mi-k-nut. The first γ in the consonant clusters of -γsi etc. is lost after a

NOUN PARADIGM

Forms Differentiating Noun Singular and Plural

	Singular	Plural	Dual
Abs. of 0.	zero	-t,	-k, ∼k
of 3s.	∼a	∼i	∼k
of 3p.	∼at	∼it	∼γik
of 3d.	∼ak	∼kik	
Rel. of 0.	-p	-t	-k, ∼k
of 3s-p-d.	∼ata	∼isa	∼kit
Al. of 0.	-mut	-nut	∼ŋnut
of 3s.	∼anut	∼inut	"
of 3p.	∼annut	∼innut	∼γiŋnut
of 3d.	∼aŋnut	∼inut	∼kiŋnut
Prl. of 0.	∼kkut	-tiγut	∼γtiγut
of 3s.	∼aγut	∼isiγut	∼kikut
of 3p.	∼atiγut	"	"
of 3d.	∼akikut	∼kikut	
Abs. of 4s.	∼ni, -i	∼ni	∼ŋni
of 2s.	∼t	∼tit	∼kit
of 1s.	∼γa	∼kka	
of 2d., 4p-d.	-ɣtik	∼tik	∼γtik
of 2p.	-ɣsi	∼si	∼γsi
of 1p.	-ɣput	∼vut	∼γput
of 1d.	-ɣpuk	∼vuk	∼γpuk

NOUN PARADIGM

Forms which lump Noun Singular and Plural

	Relative		Allative		Perlative	
	s-p.	d.	s-p.	d.	s-p.	d.
Of 4s.	-mi	∼ŋmi	-minut	∼ŋminut	-miγut	∼ŋmiγut
Of 4p-d.	-mik	∼ŋmik	-miŋnut	∼ŋmiŋnut	-mikut	∼ŋmikut
Of 2s.	-vit	∼γpit	∼γnut	∼ŋnut	∼γkut	
Of 1s.	-ma	∼ŋma	∼vnut		∼vkut	
Of 2p.	∼vsi	∼vtik	∼vsinut	∼vtiŋnut	∼vsiγut	∼vtikut
Of 2d.	∼vtik		∼vtiŋnut		∼vtikut	
Of 1d.	∼vnuk		"		"	
Of 1p.	∼vta	∼vnuk	∼vtinut	"	∼vtiγut	"

case-forms beginning in -v- or -m-. Others take the plural base in limited cases: those beginning with a vowel (like ∼a) only when the theme ends in -ɪk or -ɪq (with weak ɪ), stem-final consonant. A final t optionally combines with s or t of the suffixes ∼si and ∼tik to give ʂ; final t plus the initial of ∼ni,-i gives a single n; final t before a prevocalic v (as in ∼vit) usually combines to a single p; t may be dropped before initial

[2] For the plural base and other features of phonology, see VFPA 6.32-34.

m of rel. and adverbial case endings; ~ɣnut normally appears as ~ŋnut but added to q we get -ɣnut. Of the phonological points mentioned here, only the last group are limited to paradigmatic suffixation; the remaining are of general application.

3. Alongside the regular noun inflection there are a few special types of substantives, whose treatment is similar in main outlines but which do not have the same full paradigm and also show a few deviations of form.

Two personal pronoun stems, for first and second person, are each used with endings corresponding to the person of the stem. The second person is regular: s. ivlit, p. ilivsi from stem iliv-, plural base ivli- plus regular endings -t, -si. The first person has uvaŋa *me* and uvaɣut *us*, built on a stem uvav- with ~ŋa and ~ɣut instead of ~ɣa and ~vut (cp. the verb endings). The remaining forms of both pronouns are regular.

There are several stems which are used with pronominal endings in an appositional instead of a possessive relation, for example, kisi- *alone*. The endings for the third person are like those of the relative case with the one difference that 3s. is ~at (thus kisiat *him alone*) as distinct from 3p-d. ~ata.

The inflection of demonstratives and directional words is limited to third person. It includes a set of forms for the simple location as well as one referring to persons or things in the given location. The pronominal p-d. distinguishes accusative and nominative (like Latin) instead of absolute and relative.[3] The formation may be illustrated with av-a *north*, av-na *the one in the north*, avku *the ones in the north* (p-d). The locational forms include absolute (ava) and four adverbial cases: al. avuŋa; abl. avaŋŋa; loc. avani; prl. avuuna. The pronominal forms include the full set of cases, as follows (singular, plural-dual): absolute or accusative avna or anna, avku; relative or nominative avʂuma, avkua; al. avʂumuŋŋa, avkunuŋŋa; abl. avʂumaŋŋa, avkunaŋŋa; loc. avʂumani, avkunani; prl. avʂumuuna, avkukut; instr. avʂumiŋŋa, avkuniŋŋa. It is seen that the pronominal stem, except for the absolute, has the stem avʂum- or avsuv- (m < v + n) in the singular, avku(n)- or avku- in the plural-dual. The case endings are different from those of nouns, but are reminiscent at many points. The ending of the abs. s. has two optional variants, -nna and ~nna (without or with eliding effect); if the stem ends in k the resultant is always ŋŋ (that is, k + nn > kn > kŋ > ŋ . The other endings are non-eliding. The following forms of different demonstratives are irregular: locational prl. maauna (*thru here*) pronominal rel. mattuma etc., stem ma- *here*; abs. uvva, prl. uɣuuna, al. uɣuuŋa, pron. rel. uuma etc., stem uv- *here, there*; abs. ivna or iŋa, stem ik- *yonder*; pron. rel. kattuma etc., stem kan- *west*. The demonstrative taʂʂa, tamaʂʂa *there* is uninflected, occurring only in these two absolute forms.

Also limited to third person is the inflection of interrogatives su- *what* and ki- *who*. The singular forms are: abs. suna, kina; rel. suup, kia; al. sumut, kimut. The plural-dual forms are: abs. and rel. suut, kikkut; allative suunut, kikkunnut. Locative, ablative and instrumental are formed like the allative. Kleinschmidt gives a perlative only for the singular of *what*, namely sukut.

4. The verb endings can be divided into a mode-sign and a personal ending. The latter indicates the person and number of the subject and object. One-pronoun endings are best alined with the object portion of two-pronoun endings; they can be considered as having zero subject.

The combinations of subject and object show some limitations. Independent modes, including indicative and interrogative and optative, cannot have a recurrent (4.) pro-

[3] See Kleinschmidt, p. 23.

noun as subject or object. The subject participle must, by definition,[4] have a recurrent subject; however, the forms used are those of the singular third or zero subject with objects in the different persons and numbers. In two-pronoun complexes, two third persons are possible, but not two recurrents or two seconds or two firsts. (For the reflexive relationship, Eskimo uses the one-pronoun forms.) Kleinschmidt lists no first-person subject forms for the interrogative, without explaining the significance of the omission.

The mode-signs involve some variation and combinatory irregularity, in part according to phonetic conditions, in part according to the personal endings with which they are used. In the personal endings themselves, there are some differences from one mode to another. For third person object, some modes take endings identical with those of noun possessor in the absolute case, the rest use distinctive verbal endings; thus, for 3p. subject with 3p. object, the indicative ending is -vait (made with noun p. abs. of 3p. ~it), the subjunctive is -γp-atiγik (made with verbal 3p./3p. -atiγik). Within the verbal type of endings there are some special features limited to one or more modes: The optative and subject-participial modes eliminate the -a- of the third person subject suffixes. These two modes and also the interrogative eliminate the -v- that begins most subject-endings of the first and second persons. For 0. and 2s. subject and for 3s./3s., it is necessary to list additional forms which we may call 'dependent-type variants,' because they occur mostly in the dependent modes. These variations of treatment can be indicated, along with any other peculiar features, in remarks given with the mode-signs. As a brief notation for subject-object complexes, we write, for example, 3s./1p. meaning third person singular subject with first plural object, or 3./2-1. meaning any third person subject with any second or first person subject.

[4] VFPA 6.42.

Because of variations in the form of the mode-signs and of endings, our method of listing the two parts separately does not provide a really simple account of the verb paradigms. In consequence, to know a given form, it may actually be easier to consult Kleinschmidt's tables than to put together the mode-sign and the ending. The value of the analytic listing lies in revealing, in at least a general way, the make-up of the paradigmatic forms.

4.1. Mode-signs

Indicative: -vu(q)-, -va(q)-, -va-. The form -vu(q)- is used for zero subject; 0./2s. -vutit (not *-vut) is irregular. -va(q)- is used with noun-type endings for all third-person objects, and also in 2./1s. -vaγma with verbal ending. -va- for all other combinations.

Object participle: -tṣu(q)-, -γik-, -γĭ-. The form -tṣu(q)- is used for zero subject; 0./2s. -tṣutit (not *-tṣut) is irregular. -γik- is used with noun-type endings for 3. object; irregular are 4s./3s. -ŋni (not *-γiŋni), 4p-d./3s. -γitik (not *-γiγtik). -γĭ- for all other combinations; the endings for 2s. subject are dependent-type.

Subject participle: -lu-. Occurs only in 3./4-3-2. and 0./1. Eliminates -a- of third-person subject endings. Uses dependent-type variant in 0./1. minus -v-, and with -ŋa instead of -ma in 0./1s.

Subjunctive: -γp- before vowels, -γu- before consonants. Uses dependent-type variants of the endings, where they exist.

Conjunctive: -ŋm- before vowels, -γa(m)- before consonants. The -m- of the preconsonantic form appears only in the combination -γami- involving -γa(m)- together with recurrent-person -ni-.

Interrogative: -vĭ-,-v-,-vi-. The form -vĭ- (that is, -vi- before consonants but without assibilating t, -va- before vowels) for 0./2. and for 2d./1. The form -v- for 3./3. The form -vi- with endings minus -v- (for example, -visiuk instead of *-vivsiuk) for 2./3. and 2s-p./1., but 2d./1. has -vĭ-

(does not assibilate a following t); irregular 2d./3s. -vikku (not *-vitiku). No information in Kleinschmidt on 1. subject or 0./1.

Optative: -la-, -laq-, -li-, -lĭ-, -k-, zero. -la- for 0./1. with dependent variants minus -v- and with -ŋa instead of -ma for 0./1s.; also for 1./2., lacking -v- of ending in ls./2s. -laγit (not *-lavkit). -laq- with noun endings for 1./3s. Further, -li- with endings minus -a- for third-person subject. -lĭ- for 0./3-2., with irregular 0./2p. -litsi. -k- for second-person subject before -γ- or -ŋ- (combining to -kk-, -ŋŋ-); zero for second-person if there is no -γ- or -ŋ-.

∼ŋŋiŋm- before vowels, ∼ŋŋinna- before consonants. The negative of the subject participle is simply ∼nna-, occasionally -γa-. An irregular 0./2s. interrogative ∼ŋŋipit is used with a special reproachful connotation.

Except as noted, the phonology of combination, between the verb-theme and the mode-sign as well as between the mode-sign and the pronominal endings, is regular and in keeping with the rules already mentioned in connection with the noun endings. Changes that one finds illustrated are: assibilation of t (after i), spirantization of

PERSONAL ENDINGS

(Note: where two forms are given, the second is the 'dependent-type variant,' used mainly with dependent modes.)

Subj. \ Object	3s.	3p.	3d.	4s.	4p-d.	2d.	2s.	2p.	1s.	1p.	1d.
0.	zero, -at	∼t, -ata	∼k, -anik	—, -ni	—, -nik	∼tik, -vtik	∼t, -vit	∼si, -vsi	∼ŋa, -ma	-γut, -vta	-γuk, -vnuk
3s.	-auk, -aγu	-aγit	-aγik	-ani							
3p.	-aguk	-atiγik	-atikik	"	-atik		-atit	-asi	-aŋa	-atiγut	-atiγuk
3d.	-akku	-atikik		-aŋni							
4s.	-niuk	-niγit	-niγik	—	—	-nisik	-nisit	-nisi	-niŋa	-nisiγut	-nisiγuk
4p-d.	-nikku	-nikkik									
2s.	-uk, -γku	-γit, -γkit	-γik, -γkik	-ŋni	-γtik	—	—	—	-ŋa, -ŋma	-vtiγut	-vtiγuk
1s.	-vku	-vkit	-vkik	-vni	-vtik		-vkit	-vsi	—	—	—
2p.	-vsiuk	-vsiγik	-vtikik	-vsini			—	—	-vsiŋa	-vsiγut	"
1p.	-vtiγu	-vtiγik	- "	-vtini			-vtiγit	"	—	—	—
2-1d.	-vtiku	-vtikik		-vtiŋni			-vtikit	"	-vtiŋa	-vtiγut	"

Phonological notes: Final q, listed for a few mode-signs, is found only in cases of third singular object; it is like the noun final that is dropped to form the plural base. The initial v of the indicative and interrogative mode-signs is lost after final ĭ of a stem, the ĭ then changing to a, as is regular before a vowel. The v of indicative -vuq is optionally lost after a. The initial -tş- (in the object participle) means ş after vowels but t after consonants. Combinations of the negative suffix ∼ŋŋit- with mode-signs include several irregularities. The negative indicative is ∼ŋŋila(q)- except that for 0./2p. and 0./2d. one gets ∼ŋŋitlasi and ∼ŋŋitlatik. The negative conjunctive is stops, nasalization of k before nasal, stopping of spirants.

5. Having set up the paradigms in as economical a manner as is possible considering the fusion and irregularities they contain, we may now study the considerable amount of agglutination also present. If our procedure resembles and has a bearing on historical reconstruction, this is not our immediate purpose, which is simply to get a measure of the agglutinative aspect of a mixed system. We do this by noting departures from agglutinative principles, and by setting up a list of component elements

that will account for the great majority of actual forms.

First we note that there are a few elements that express two inflectional notions together without being formally unanalyzable. Thus, we would expect the p. abs. of 3s. to contain a plural sign and a possessive suffix, but the actual form, ~i, cannot be analyzed on the basis of any contemporary rules of Greenlandic phonology that we know. Another example is 2p. -si, not analyzable into person and number components. Both of these elements enter into combination with other elements of complex endings, for example, plural allative of 3p. ~innut < ~i-t-nut (p. 3.-p.-al.), 2p./1p. -vsiγut < -v-si-γ-vu-t (subject-2p.-object-1.-p.).

Where two or more forms of the same ending occur, they are most often regular phonetic variants, for example, -vit after vowels, -pit after consonants. In some cases, the phonetic differences are unusual, departing from known normal patterns of the language; thus, object 3s. -uk and -γu appear to be based on a common *-uγu with loss of one or the other vowel along with regular stopping of γ to k in final position. In a few instances, we have unconnected variants, as -γ- or -t for second person, -ŋa or -γa or -v(u)- for first person, -v- or -a or -n- for relative and subject marker. Still other instances of alternants have been seen in the mode signs.

Variation in phonological effect is found in different uses of the same element. Thus, the simple relative is non-eliding -p (< -v-) but the various possessed relatives all have eliding effect, as for example rel. of 2p. ~vsi. One cannot attribute any special significance to such phonological variation, for the reason that it is connected with differences in phonetic situation, whether final or non-final, whether intervocalic or in a consonant group, and so forth. Also, if a suffix occurs only after vowels, we cannot classify it one way or the other with regard to consonant-eliding effect, yet we mark it with straight hyphen as though it were non-eliding.

A remarkable fact of Greenlandic paradigmatic formation may be described as transferred function,[5] the regular use of an ending for other complexes than that corresponding to its form. Thus, -tik can be identified as 2d., agglutinatively formed out of second person -t and dual -(i)k. The complex is found in its proper value in the noun paradigm, both in the absolute and in the adverbial case forms (-v-tik, -vtiŋnut < -v-tik-nut, -vtikut < -v-tik-γut), and in the verb paradigm, both in 0./2d. -tik and in more complex forms like 2d./3s. -vtiku <-v-tik-γu and 3s./2d. -a-tik. But in addition to these simple usages, we also find -tik in a number of cases where 2d. is not involved. One such case is 2p./4p. -vtik (not *-vsinik); further instances will be found in the paradigms, counting up to over a dozen. It may be noted that the use of -tik is always in endings involving either a dual or 4p., which is always identical with 4d.; therefore, some of the occurrences of -tik may be taken as involving the dual suffix in a position other than usual, but this is not the only anomaly involved, for example, in rel. d. of 2p., where a displaced -(i)k would give *-vsik, while the actual form is simply -vtik, identical with the rel. s-p-d. of 2d.

Other instances of transferred function include the use of dual for plural, the plural for all three numbers, the singular for all three numbers.

In a few cases we have to deal with like-sounding but unrelated elements. Outstanding cases are -t, plural or 2s.; -γut, perlative or 1p. object; -ni locative or 4s.

[5] This phenomenon seems to be paralleled in Latin in the use of vowel-lengthening, characteristic of the ablative, to form the dative of o-stems and of neuter u-stems in place of the -i· found with other types of stems. Thus, the dative of feminine manu- *hand* is manui· as against ablative manu·, but the dative of neuter cornu- is cornu·, identical with the ablative.

6. The basic order of elements in the noun paradigm seems to be: number-sign, relative case, personal pronoun, pronominal number, adverbial case. In this series, relative and adverbial case, though mutually exclusive as grammatical concepts, appear together formally since relative -v- is clearly present in most complexes involving adverbial cases.

The order of elements in the verb ending is: mode sign, subject marker, pronoun person, pronoun number, object marker, pronoun person, pronoun number. However, not all endings show all seven components.

7. We can now attempt a list of the paradigmatic components, disregarding the instances of transferred function and some of the irregularities.

Number markers: s. zero or -q (spirantized -ɣ-); p. -t (with insert vowel, -it); d. -k (with insert -ik, spirantized -ɣ-, nasalized -ŋ-). In 1p. subject and rel. of 1p. -vta, medial -vti-, the added vowel is perhaps to be considered as a case-marker, rather than as a part of the plural sign; -vta would thus be from *-vu-t-a instead of from *-v-vu-t, with final -a in place of first-position -v- for the relative and subject marker.

Case markers: The most usual sign of the relative or subject is -v- (final -p); object, ordinarily unmarked, is sometimes shown by -ɣ-; the adverbial cases in their usual forms are loc. -ni, al. -nut, abl. -nit, instr. -nik, prl. -ɣut, similative -tut. The element -v- (final -p) is found in the relative case of the noun in most forms but fails to appear in some, presumably due to phonetic conditions; in the non-possessed noun it might seem to be confined to the singular, but the possessed forms show its use in plural and dual also, for example d. of 1s. ∼ŋma is evidently from -k-v-ŋa. The same -v- is found also in conjunction with the adverbial cases. In subject-object endings of the verb, -v- marks the subject, as in 2p./1p. -vsiɣut < -v-si-ɣ-vut. This last form also illustrates the use of object marker (-ɣ-, found in 1p. -ɣut, 1d. -ɣuk, 3p. -ɣit, 3d. -ɣik, 3s. -uk or -ɣu. The two forms of 3s. are perhaps from *-uɣu by loss of one or the other vowel; since the sign of third person in the object seems to be zero in all other forms, the vowels of *-uɣu would appear to be a function of object -ɣ- when it occurs with any suffix following.

The absolute case of nouns has no special marker, but an element -na is found in the interrogative pronouns suna *what*, kina *who*. The ending -nna of demonstratives is possibly the same -na combined with another element. In other cases also, the demonstratives have elements peculiar to them. They have -ŋa in three adverbial cases, as seen in al. avşumuŋŋa < avşu-v-nut-ŋa, instr. avşumiŋŋa < avşu-v-nik-ŋa, abl. avşumaŋŋa < avşu-v-nat-ŋa. The endings for these three cases are otherwise like the noun except for abl. -nat- in place of -nit. Locative avşumani, p. avkunani contains a -na- not accounted for. The perlative has -nuuna in place of the usual -ɣut. Finally, the non-pronominal location forms have no -n- initial in any of the adverbial case-endings nor in the absolute; thus, abl. avaŋŋa, abs. ava.

While the relative and subject element is usually -v-, there are some departures from this rule. We find -a in kia, avkua, rel. of 3p. ∼ata, 1p. -vta, -vti- < -vut-a); note that the order of this element in the complex is different from that of -v-. There is also a relative -n- in rel. of 3s. ∼at (final n becomes t), 0./3d. -a-n-ik, rel. of 1d. -vnuk (< -vu-n-k by transposition).

Among pronoun suffixes, the subject and object generally employ the same elements, differentiating them by the case markers. However, third person object is shown by zero. Taking this into account and disregarding specific anomalies, the personal endings in their bare forms are: 4. -ni, 3. -a, 2. -(i)t, alternate 2s. -ɣ-, 2p. -si, 1. -v(u)-, usual 1s. -ɣa or -ŋa. Except as noted, the

plurals and duals are formed by adding the number endings to the pronominal element, giving -nik (*-nit not used), -at, -ak, -tik (*-tit for 2p. replaced by -si), -vut, -vuk. The alternate 2s. -ɣ- is used in the dependent-variant endings -ɣku, -ɣkit, -ɣkik, -ŋni, -ŋma (-ɣ- nasalizes to -ŋ-). Note that obj. marker -ɣ- combines with first-person -vu- to -ɣu, but noun dual k combines with it to give -ɣpu-. First person -v(u)- is found for singular subject, as in -vku, -vkit, vkik, -vni, vtik, vkit, -vsi; for the object and possessive 1s., only -ɣa and ŋa are found.

To the elements already treated, we have to add abs.p. of 3. ∼i, 3p. ∼it (*∼ik not used). The dual forms of the absolute and relative of 3. are hard to explain from the agglutinative point of view.

Phonological notes: Aside from regular combinatory changes, the paradigmatic endings exhibit some special phonology. The following are the most important special features:

(a) v + n, ŋ > m. Examples: -mut (< -v-nut) and similarly other adverbial cases, rel. of 4. -mi < -v-ni, rel. of 1s. -ma < -v-ŋa. Uncontracted -vn- in allative (etc.) of 1s. ∼vnut is from -vu-nut, rel. of 1d. ∼vnuk is from -vu-n-k by transposition. Similarly, m + n > m in -ɣam-ni- > -ɣami- (conjunctive plus recurrent -ni-).

(b) k + ɣ > k instead of regular kk. Examples of regular combination in the paradigms: -kka, -akku, -nikku, -nikkik. Examples of simple k: -kikut, -nikut, -vtikut, -vtiku, -vtikik. ɣ + ɣ > ɣk in prl. of 2s. -ɣkut.

(c) The sequence *-ɣvu- is simplified to -ɣu, as in 1p. and 1d. obj. But *-k-vu- gives -ɣpu-, as in dual of 1p. and 1d.

(d) -n- becomes t when final. Compare 0./3d. -an-ik with 0./3s. -at.

(e) Vowels are lost in some positions, as -vta < *-vu-ta, -uk and -ɣu < *-uxu.

(f) -a of final position becomes i medially, as in 1p. -vta, -vti-.

KUTENAI I: PHONEMICS[1]

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1. Contours
2. Consonants
3. Vowels
4. Consonants vs. vowels

1. The stream of speech in Kutenai[2] is broken up into phrases by clearly audible pauses. Phrases consist of one or more stress contours. The criterion for the contour unit is primary stress; a given contour may consist of one, two, rarely more than two, words. The contour, not the word, is the matrix of phoneme distribution.

Kutenai phonemes are consonants p, t, k, q, ʔ, s, ɬ, x, h, c, (č), m, n, l, w, y, and vowels i, u, e·, o·, a, a·. Consonants occur contour-initially, medially, and finally; vowels occur contour-medially and finally.

Both the number and type of words which enter in a contour, and phoneme distribution are affected by speech style. Kutenai has two styles; style II differs from style I by a more limited distribution of certain phonemes and allophonic features, and by the occurrence of contours containing more than one polysyllabic word. Style I is more careful, more deliberate and formal, and sometimes slower than style II. A given utterance can be spoken in either style or in both.

Contour units are penultimately stressed or finally stressed.

Penultimate stress contour may in both styles consist of a polysyllabic word ± preceding monosyllable ± nonsyllabic word, or of two monosyllabic words ± nonsyllabic word. In addition to these, penultimate stress contour may in style II also consist of two polysyllabic words ± preceding monosyllable ± nonsyllabic word. This contour is indicated by the absence of stress marks: kqaqanałkqa·c [kqàqanáłkqa·c] *automobile*, nis akikłunamis [nɨs akɨkłunámɨs] *the town* (obv.), huqałwiyn'o·łʔupxa [hʉ̀qałwìyno·łʔúpxa, style II] *I want to know* saʔn pał [sáʔnpał] *but indeed*.

Final stress contour may in both styles consist of a polysyllabic word ± preceding monosyllable ± nonsyllabic word, or of a monosyllabic word ± nonsyllabic word. In addition to these, final stress contour may in style II in rare instances also consist of two polysyllabic words ± preceding monosyllable ± nonsyllabic word. The stressed final syllable is followed by a juncture which can be heard as a brief pause (shorter than the pause between phrases). We mark final stress with an acute accent: sa·klamán [sà·klamán ǂ] *sacrament*, lipá·p [lɨpá·p ǂ] *the*

[1] Data were obtained from the Lower Kutenai bands at Bonners Ferry in the Idaho "panhandle" and at Creston in southern British Columbia, and from the Upper Kutenai band at Cranbrook in southern British Columbia, during a field trip in the summer of 1946 under a grant from the Penrose Fund of the American Philosophical Society, which is hereby gratefully acknowledged.

[2] Although the division of the Kutenai into Upper (UK) and Lower (LK) exists also linguistically, dialect differences are not sufficiently marked to warrant separate analyses: the two dialects have identical phoneme patterns, though they differ somewhat in the distribution of certain vowel allophones. In a number of cognate morphemes, LK i corresponds to UK u, e. g.: LK ʔ-ip-, UK -ʔup- *to die*, LK -ʔipsła·tił-, UK -ʔupsła·til- *always*. There is also some variation in phoneme distribution in one speech style (see Morpheme Variations, **1. 2**). The most marked dialectal differences, however, are purely lexical. Cf. also Paul L. Garvin, Christian Names in Kutenai, IJAL 13.69–77 (1947). For other published works on Kutenai, see Franz Boas, Kutenai Tales, together with texts collected by Alexander Francis Chamberlain, BAE-B 59 (Washington, 1918); Philippo Canestrelli, Grammar of the Kutenai Language, annotated by Franz Boas, IJAL 4.1-84 (1927); Franz Boas, Additional Notes on the Kutenai Language, IJAL 4.85–104 (1927). My Kutenai II: Morpheme Variations will appear in the next issue of IJAL.

Pope, husłtá·ł [hωsłta·l ˊ] *I can make it*, ná na?ta· [ná ˊ ná?ta·] *up here*.[3]

In both contour types, the stressed syllable is followed by an additional syllable length. In penultimate stress contour, this is the final unstressed syllable; in final stress contour, this is the juncture. This post-tonic syllable length marks the boundary of two adjacent contours. Phrase-initially and phrase finally, contour boundaries coincide with phrase boundaries.

Beside primary stress which enters into the definition of the contour, there is a phonetically weaker secondary stress which, although automatic in certain distributions, is phonemically distinctive in others.

Some contours have distinctive secondary stress on any syllable preceding the stressed syllable. Every second syllable preceding distinctive secondary stress has automatic secondary stress. Syllables between the syllable bearing distinctive secondary stress and the primarily stressed syllable are unstressed. We write distinctive secondary stress with a grave accent: kcxałsiłqà?uquna-nike·ts [kcxàłsɹdqà?ωqωnanɹke·ts] *they who are not going to do right by him*, huc?ìsnilqa·-nqame·k [huc?ìsnɹdqa·nqáme·k] *I'll sit there myself*.

Contours which do not have distinctive secondary stress show automatic secondary stress on every second syllable preceding the primarily stressed syllable: hincłunikqawa·kaxe· [hɹncłùnɹkqàwa·kaxe·] *you will follow behind*, k?usmuko·?sas [k?ùsmukó·?sas] *he who goes in front* (obv.).

A given contour may contain style I forms only, style II forms only, or a mixture of style I and style II forms: husiłq?akpame·k (style I), husłq?akpamik (style II), husłq?akpame·k (styles I and II mixed) *I'm forgetting*.

Contours containing forms of style I only, style II only, or styles I and II mixed, may occur together in the same phrase: n'o·łqawxałyuxaqno· (style II) na à·kic?-łanxu?me·k (styles I and II mixed) kucxałła?ùnmitikimik (style II) *I should really step on the log lying there and jump down from it*.

2. Consonants are: stops p, t, k, q, ?; spirants s, ł, x, h; affricates c, (č); nasals m, n; voiced l; semivowels w, y.

Phonetic features of consonants are different when they occur in clusters and when they are adjacent only to vowels. Unless otherwise stated, phonetic descriptions are of consonants as they appear adjacent to vowels.

2.1. The stops p, t, k, and q are voiceless and unaspirated. They are produced at bilabial, dental, velar, and back velar points of articulation respectively. q has a free variant with slightly fricative release. In contact with vowels, this variant may be very slightly voiced.

The spirants s, ł, and x are voiceless and produced at dental, lateral, and velar points of articulation respectively.

The affricate c is voiceless and produced at a dental point of articulation. It has stop on-glide and spirant off-glide (phonetically [ts]).

Glottal stop ? and glottal spirant h are produced in the larynx with a light breath of voice.

Nasals m and n are voiced and produced at bilabial and dental points of articulation respectively.

Voiced l is produced at a lateral-alveolar point of articulation.

Semivowels w and y are produced, without friction, at bilabial and palatal points of articulation respectively.

2.2. All consonants[4] occur in contour-initial and contour-medial positions: pa·cxunawasne·

[3] Polysyllables belonging to the finally stressed contour type are prevailingly loanwords. Only one native polysyllable belonging to this type was recorded (husłtáł), which is a unique morpheme sequence consisting of three prefixes. Cf. also Paul L. Garvin, loc. cit. 71.

[4] č has a very limited distribution. It occurs only initially in a few loanwords such as ča·łí *Charles*, čapaní *Japanese*.

he scattered us, tinaxa?mne· *he went in*, kuyakiłq?umne· *my bed*, qanaxe· *he was going*, ?iktkakine· *he lifted it*, sawsaqwumne· *somebody was there*, łukpu *cow*, xunmitqłapne· *he threw me into the water*, huqa?upxne· *I don't know*, ciłmiyit *night*, miksa·n *but*, ná na?ta· *up here*, lamás *mass*, wupnikslikne· *it was a new track*, yunaqa?ne· *it was much*.

Intervocalic h before primary stress is found in both styles I and II; intervocalic h before syllables other than those bearing primary stress is found only in style I, in the same utterance spoken in style II h is dropped and the two adjacent vowels coalesce into either a single vowel or a vowel plus a semivowel, e. g. nictaha·ł (style I), nicta·ł (style II) *boy*, nahò·sanmiyitke· (style I), nàwsanmiyitke· (style II) *today*.[5]

p, t, k, q, ?, s, ł, x, c, m, n, l, w, and y occur also in contour-final position: kincqsamunałap *can you help me?*, kwanxa·?mce·t *engineer*, ?a·kinmito·k *river*, naqsaq *marten*, ?a·kiłmuho·s *star*, ?a·kitłaniskił *your* (pl.) *house*, ?in tax *this here*, kstamatke·c *he who gave it to him*, kcxanatamnam *people were telling each other*, k?upxałikin *does he see tracks?*, ka·smíl *Casimir*, malkiw *Melchior*, kqałwiy *does he want it?* ? occurs in contour-final position only as the last member of a final cluster: ?a·kłat? *fore leg*. h is the only consonant not found in contour-final position.

p, t, k, q, ?, s, ł, x, c, m, n, w, and y occur in clusters in both speech styles. h occurs in clusters after non-glottal consonants only in style I. In style II, it is dropped in all such clusters: c?inałhucinqə·ce· (style I), c?inałucinqa·ce· (style II) *he went to climb up*, ?at hun?e·qułne· (style I), ?at'un?e·qułne· (style II) *I do drink*.[6]

This distribution of h sets it off from all other consonants.

The glottal stop appears frequently between stressed vowel and consonant, less frequently between unstressed vowel and consonant.[7]

2.3. p, t, k, q, s, ł, x, and c occur as first members of initial clusters: pyał Peter, tkaxa?mne· *he came in*, kqałsakwata· *three quarters*, qsacqa·kxaxe· *they came in from various far-away places*, skikqa?ne· *he is lying there*, łkamu *baby*, xmak?aqsa *how many*, cxałcxanatkaxamik *they will confess*. n occurs as first member of only one initial cluster: n?, where it is in free variation with zero (zero being the preferred variant in LK): n?inne· ~ ?inne· *he is*. This contrasts the non-glottal stops and spirants and the affricate c with the glottal stop, the glottal spirant h, the voiced lateral, nasals and semivowels. We call the first type of consonants (p, t, k, q, s, ł, x, and c) consonants of class I (abbreviated C^{I}), and the second type of consonants (?, h, l, m, n, w, and y) consonants of class II (abbreviated C^{II}).

Consonants of class I are phonetically voiceless. ? is pronounced voiced initially, intervocalically and before consonants, voiced and voiceless medially after consonants, voiceless in final position after consonants. Other consonants of class II are phonetically voiced.

2.4. Consonant clusters consist of two, three, or four consonants in contour-initial position; two, three, four, or five consonants in contour-medial position; two or three consonants in contour-final position. Consonants of classes I and II are distributed in clusters as follows:

Initial clusters—$C^{I}C^{I}$, $C^{I}C^{II}$; $C^{I}C^{I}C^{I}$, $C^{I}C^{I}C^{II}$, $C^{I}C^{II}C^{I}$; $C^{I}C^{I}C^{I}C^{I}$, $C^{I}C^{I}C^{II}C^{I}$, $C^{I}C^{I}C^{II}C^{II}$. Medial clusters—$C^{I}C^{I}$, $C^{I}C^{II}$, $C^{II}C^{I}$, $C^{II}C^{II}$; $C^{I}C^{I}C^{I}$, $C^{I}C^{I}C^{II}$, $C^{I}C^{II}C^{I}$, $C^{I}C^{II}C^{II}$, $C^{II}C^{I}C^{I}$, $C^{II}C^{II}C^{I}$, $C^{II}C^{II}C^{II}$;

[5] See Morpheme Variations, **1. 2.**

[6] See Morpheme Variations, **1. 1.**

[7] This is to a large extent due to the fact that a number of morphemes which have short vowel + ? in primarily stressed position, have short vowel in pre-tonic unstressed position, and short or long vowel in post-tonic unstressed position. (See Morpheme Variations, **2. 2.**)

$C^IC^IC^IC^I$, $C^IC^IC^IC^{II}$, $C^IC^IC^{II}C^I$, $C^IC^IC^{II}C^{II}$, $C^IC^{II}C^IC^I$, $C^IC^{II}C^IC^{II}$, $C^IC^{II}C^{II}C^I$, $C^{II}C^IC^IC^I$, $C^{II}C^IC^IC^{II}$, $C^{II}C^IC^{II}C^I$, $C^{II}C^IC^{II}C^{II}$. Final clusters—C^IC^I, C^IC^{II}, $C^{II}C^I$, $C^{II}C^{II}$; $C^IC^{II}C^I$, $C^{II}C^IC^I$.

The first member of an initial cluster is always voiceless (C^I). Final $C^{II}C^{II}$ clusters consist of glottal stop and nasal, they are voiced. The last consonant of other final clusters is always voiceless (C^I, or ʔ voiceless in final position = C^{II}). Medial CC and CCC clusters occur in all possible combinations of C^I and C^{II}, the combinations of C^I and C^{II} in medial CCCC and CCCCC clusters are more restricted.

In my material, the following 417 clusters were found: 81 initial, 309 medial, 27 final. A statistical breakdown of clusters by consonants contained in them yields the following results:

As first member, p occurs in 2 initial, 21 medial, and 2 final clusters; t in 2 initial, 26 medial, 4 final; k in 34 initial, 41 medial, 6 final; q in 3 initial, 26 medial, 2 final; ʔ in 33 medial, 5 final; s in 15 initial, 33 medial, 1 final; ł in 8 initial, 35 medial, 2 final; x in 1 initial, 5 medial; c in 15 initial, 20 medial; m in 11 medial, 1 final; n in (1 initial), 35 medial, 1 final; l in one medial; w in 5 medial, 1 final; y in 11 medial, 2 final. h has not been found as first member of a cluster.

As last member, p occurs in 2 initial, 5 medial, and 2 final clusters; t in 3 initial, 16 medial, 3 final; k in 10 initial, 28 medial, 3 final; q in 8 initial, 23 medial; ʔ in 15 initial, 39 medial, 3 final; s in 7 initial, 21 medial, 13 final; ł in 7 initial, 31 medial; x in 7 initial, 22 medial; h in 1 initial and 1 medial; c in 3 initial, 14 medial, 1 final; m in 7 initial, 28 medial, 1 final; n in 2 initial, 19 medial, 1 final; l in 2 initial, 5 medial; w in 3 initial, 19 medial; y in 4 initial, 10 medial.

As interconsonantal member, p occurs in 3 medial clusters; t in 10 medial; k in 5 initial, 39 medial, 1 final; q in 6 initial, 22 medial; ʔ in 2 initial, 30 medial, 4 final; s in 5 initial, 32 medial; ł in 16 initial, 19 medial; x in 1 initial and 5 medial; c in 11 initial and 29 medial; m in 2 medial; n in 6 medial. h, l, w, and y have not been found as interconsonantal members of clusters.

2.5. The following is a list of all clusters that were found (clusters in parenthesis only in style I):

CC Clusters

Initially: pl, py; tk, tʔ; kp, kt, kk, kq, kʔ, ks, kł, kx, kc, km, kn, kl, kw, ky; qk, qʔ, qs; st, sk, sq, sł, sn, sw; łp, łk, łq, łʔ, łt; xm; ct, ck, cq, cʔ, cs, cł, cx, (ch), cm; [nʔ ∼ ʔ].

Medially: pt, pk, pq, ps, pł, px, pc, pm, pn, pl, py; tk, tq, tʔ, ts, tł, tx, tc, tm, tn, tl, tw; kp, kt, kk, kq, kʔ, ks, kł, kx, kc, km, kn, kl, kw, ky; qt, qk, qʔ, qs, qł, qx, (qh), qc, qm, qn, qw; ʔt, ʔk, ʔq, ʔs, ʔł, ʔx, ʔh, ʔm, ʔn, ʔw; sp, st, sk, sq, sʔ, ss, sł, sx, sc, sm, sn, sl, sw; łp, łt, łk, łq, łʔ, łs, łł, łx, (łh), łc, łm, łn, łw, ły; xt, xx, xm, xn, xw; ct, ck, cq, cʔ, cs, cł, cx, cc, cm, cn, cw; mt, mk, mʔ, ms, mł, mx, mc, mm, mn, mw; nt, nk, nq, nʔ, ns, nł, nx, (nh), nc, nm, nn, ny; ll; ws, wł, wx, ww, wy; yt, yk, yq, ys, ył, yx, yc, ym, yn, yw.

Finally: pk, ps; tʔ, ts, tc; kp, kt, kʔ, ks; qʔ; ʔk, ʔs, ʔm, ʔn; st; łt, łs; ms; ns; ws; yk, ys.

CCC Clusters

Initially: kkʔ, kqʔ, ksk, ksł, kłq, kłʔ, kłs, kłm, kcq, kcʔ, kcx, kcy; sqk, sqʔ, słq, słʔ, słł, stx, słc, słw, łqs, łcx; ckk, ckł, cky, cqs, cʔk, cxm.

Medially: pkʔ, pks, pqʔ, pst, psk, psq, psł, pxn; tkʔ, tkł, tqʔ, tqł, tʔt, tʔk, tʔq, tʔł, tʔm, tʔn, tsk, (tłh), tcx; kpq, kpʔ, kpn, ktk, kkʔ, kkł, kkm, kqk, kqł, kqn, kqw, kʔk, kʔq, kʔs, kʔł, kʔx, kʔn, kʔy, ksł, ksw, kłq, kcq, kcʔ, kcm; qtʔ, qkʔ, qkc, qʔk, qʔł, qʔx, qʔc, qʔm, qʔn, qʔy, qsk, qck, qcx; ʔtk, ʔkn, ʔsk, ʔsq, ʔsʔ, ʔsł, ʔsm, ʔsn, ʔsy, ʔłm, ʔłw, ʔmc, ʔmn, ʔnt, ʔnq, ʔnm; stk, stʔ, skq, skʔ, skx, skw, sqn, słʔ, słł, (słh), słw, sck, scq, scʔ, scm; łtʔ, łtn, łkq, łkʔ, łks, łkc, łkn, łkw, łqʔ, łqs, łqł, łst, łsw, łxn, łcʔ, lcx, łnʔ; ckp, ckʔ, ckł, ckn, cqs, cqn, cʔp, cʔk, cʔm; msk; ntp, nts, ntm, nkq, nkʔ, nkł, nkm, nkn, nqʔ, nsk, nłʔ, nłx (nłh), nłn, nxm, ncʔ, ncł, ncx; yqs.

Finally: tʔs, kʔp, kʔs, qʔs, ʔks.

CCCC Clusters

Initially: kslq, ksl?, ksls, klc?, klcl, klcx, klcm, kc?k; sq?m; ckcx.

Medially: pq?n, psł; t?km, t?xn; kq?t, kq?n, kq?y, k?kł, k?ky, ksq?; q?cq, qlsm; ?skq, ?sk?, ?skw, ?sck, ?scy; skls, slq?, sckl, scn?; lq?l, lslx, lc?k; c?kł; nlqs, nlcl, ncc?, ncqs.

CCCCC Clusters

Medially: ?sck?, ?sckł, ?scxm, ?scn?, sckcm, lcslq.

2.6. Adjacent consonants in clusters are produced as follows:

t? and k? followed by vowel are released either simultaneously (phonetically [t'], [k']), or consecutively (phonetically [t.?], [k.?]). t? and k? followed by consonant are most often released simultaneously; in final position they are always released simultaneously. q? and c? are released simultaneously in all positions (phonetically [q'], [c']).

pł, tl, kł, qł, kx, and qx are articulated as affricates, with stop on-glide and spirant off-glide.

ts is sometimes articulated as an affricate (with stop on-glide and spirant off-glide); more often t has its own release and is then followed by s. ts contrasts with c which is always articulated as an affricate: kqawunike·ts [kqàwʊnɪ́ke·t͡s or kqàwʊnɪ́ke·t.s] *a short while*—hunamatke·c [always hùnamátke·t͡s] *if I gave him.*

tc and cs are articulated as affricates, tc with lengthened on-glide, and cs with lengthened off-glide (phonetically [t·s], [t͡s·]).

? and following consonant are after vowels separated by a brief echo of the preceding vowels: ma?nis [má?ₐnɪs] *your mother*, ke·?so·k [ké·?ₐsoᵒk] *good.*

kn and xn are in style I separated by a short intrusive vowel: hun?upxne· [hun?ʊ́pxₒne·] *I know*, so·?kne· [só·?ₒkₒne·] *it's good.*

w and y as last members of clusters are in style I preceded by a short intrusive (= non-phonemic) u and i respectively: kaswo· [kásᵤwo·] *my friend*, kyukyit [kⁱyúkⁱyit] *morning.*

Geminate kk and cc are rearticulated (phonetically [k.k], [c.c]), geminate ss, łł, xx, mm, nn, ll, and ww are produced as long spirants, nasals, voiced lateral and semivowel respectively (phonetically [s·], [ɬ·], [x·], [m·], [l·], [w·]).

In all other instances, adjacent consonants in clusters are articulated separately.

3. Vowels are: unrounded high i, rounded high u, unrounded mid e·, rounded mid o·, open low a, a·.

3.1. High vowels are only short: i, u. Mid vowels are only long: e·, o·. The low vowel appears short and long: a, a·; it also occurs in paired clusters: a· versus aa and aa· (also a?a and a?a·), as in ma·c *don't*, kaakitłanała *our house*, kaa·kitła *my house*, ka?a *who*, ka?a·qałt *my child.*

Vowels occur only in contour-medial and contour-final positions. They contrast with consonants which occur also in contour-initial.

3.2. Single vowels have the following allophones:

i has a front variant [i], occurring in position adjacent to y; a back variant [ɪ], occurring between two glottal stops; a slightly lowered central variant [ɪ] in all other positions: yismaxuke· [yɪsmaxúke·] *how wide his body is*, hunuq?i?te·k [hʊ̀nʊq'ɪ́?ɪte·k] *I'm spraying myself*, ciłi?itne· [cɪɬɪ?ɪtne·] *too much brush.*

Primarily stressed i is found in both style I and II. Certain morphemes which in style I show unstressed or secondarily stressed i, drop this i in style II, e. g. sił ~ sł, as in husiłq?umne·?ne· (style I), huslq?umne·?ne· (style II) *I am sleeping.*[8]

u has three allophones in free variation in most positions: a lowered variant [ʊ]; a slightly fronted variant [ʉ]; a back variant

[8] See Morpheme Variations, **2. 3.**

[u]. Depending on position and dialect, one of these variants is preferred, although other variants may in most cases occur in the same position. In all three dialects, u is the preferred variant before n and in final position: hun?inne· [hun?ɪnne·] *I am*, łunnu [łún·u] *go away!*

In all dialects, [ω] is the preferred variant adjacent to w, and the only variant found before yC and ?C: ?uwukne· [?ωwúkne·] *it stood up*, nanuquyłune· [nanə̀qωyłúne·] *there was some snow left*, ?itxu?me·k [?ɪtxú?ˌmę·ˌk or ?ɪtxú?ˌmę·ˌk] *he lay down*. In the Lower Kutenai dialects (Bonners Ferry and Creston), [ω] is the preferred variant in all other positions: tuq?cqakłun [tωq'cqákłun] *tell me the news*, kułałaxam [kə̀łałáxam] *I who went back*. In the Upper Kutenai dialect of Cranbrook, [ʊ] is sometimes found as one of the variants preceding p: hun?upxne· [hun?-ʊ́pxˌne·] *I know, I see*. In all other positions, [u] and [ω] vary freely in this dialect: kcikkuc?łanɪłmuɬs [kcɪ́k.kuc'łànɪ́múɬs or kcɪ́k.kωc'łànɪ́múɬs] *sawmill* (obv.).[9]

The mid vowels e· and o· are very close: [ę·], [ǫ·], and often are followed by a short frontal glide: [ę·ˌɪ], [ǫ·ˌu]. These allophones are in free variation. The variants with glide are somewhat more frequent in style I, and usually absent in final position: husɪł?è·quɬnaʷwi?ne· [hùsɪ́ł?ę̀·qωɬnawí?ˌne· or hùsɪ́ł?ę̀·ˌqωɬnawɪ́ˌne·] *I drink too much*, mò·cqakiyała?ne· [mǫ̀·cqakiyała?ˌne· or mǫ̀·ˌcqakiyała?ˌne·] *we will say it*, qayaqawo· [qàyaqáwǫ·] *half*.

The low vowels a and a· are very open in all positions.

3.3. The distribution of short vowels is limited by style and stress: a number of morphemes which in other distributions contain short vowels, have long vowels in style I in post-tonic unstressed position, e. g. -kił- ~ -ke·ł, as in hin?upxakiłne· *you* (pl.) *know*, kin?upxake·ł *do you* (pl.) *know*; um- ~ -o·m, as in sawsaqwumne· *someone was here*, ˌkyunaqwo·m *sedan*.[10]

The distribution of long vowels on the other hand is limited by style only. Some morphemes which in style I have long vowels, are found with short vowels in style II. In these morphemes, long e· in style I corresponds to short i in style II, long o· in style I to short u in style II, long a· in style I to short a in style II: huq?akpame·k (style I), huq?akpamik (style II) *I forgot*; huyo·waxmitikime·k (style I), huyuwaxmitikimik (style II) *I jumped onto it;* qa·wisqa·?ne· (style I), qawisqa?ne· (style II) *he stood around here*.[11]

3.4. The vowels u, o·, a, and a· combine to form the following vowel clusters which are pronounced without any intervening juncture: ua, ua·, o·a, o·a·, aa, aa·. In these clusters, the preferred variant of u is [ω] in all dialects: yùanqamik [yə̀anqámik] *he sits on top, rides*, kyùa·kminuqka· [kyə̀a·kmɪnúqka·] *the sun goes up*. Examples of other vowel clusters are: huyo·awisqa?ne· *I stand on top of it*, qò· a·kitła?nam *that house*, kaakikłiyała *our name*, kaa·ke·nała *our hands*.

In one instance, the cluster ai was recorded: kłaiwxa·m *then being on top*.

4. Phonemic differences between consonants and vowels can be summarized as follows: (1) consonants have relatively stable phonetic values (most consonants have only one allophone), vowels present a much wider range of all allophonic variation (**2.1.**, **2.6.**, **3.2.**); (2) consonant distribution is less restricted, both with regard to positions of occurrence (**0.**, **2.2.**, **3.1.**), and clustering (number of clusters as well as number of phonemes per cluster, **2.4.**, **3.4.**); (3) distributional limitations contingent on stress and speech style affect only vowels and glottal consonants (**2.2.**, **3.2.**, **3.3.**); (4) phoneme differences in dialect cognates are only vocalic (footnote 2).

[9] In phonetic transcriptions elsewhere in this paper, variants are given as recorded in each instance.

[10] See Morpheme Variations, **2. 5.**

[11] See Morpheme Variations, **2. 1.**

THE INDIAN LANGUAGES OF BRAZIL

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0.1. Linguistic map of Brazil
0.2. Classification and orthography
0.3. Conventions of form
1. List of languages
2. List of language families

0.1. A map of the Indian languages of Brazil was prepared something over ten years ago by Čestmir Loukotka of Prague, Czechoslovakia, and published (in black and white) under the title 'Mapa de distribuição dos idiomas indígenas no Brasil' by the Revista do Arquivo Municipal de São Paulo in 1936. The map measures 18 x 18 inches (45 x 45 cm.) within the borders and is at a scale (as determined by comparison with other maps of the area) of approximately 1:11,000,000. The only geographical features shown are the coastline, the international land boundaries, and the rivers. The copy I have seen is in the possession of my colleague, James B. Watson.

This map is apparently the latest available for the region. It was published after H. W. Krieger's Indian cultures of northeastern South America (Smithsonian Report 1934. 401–21); Krieger's small map (403) agrees in general outlines with Loukotka's, but even at its small scale important differences of detail are apparent. In A. Métraux's The native tribes of Eastern Bolivia and Western Matto Grosso (BAE-B 134, 1942) the map opposite p. 2 shows only a few details for Brazilian territory, but these few agree well with Loukotka's arrangement (Loukotka's map is not listed in Métraux's bibliography). The lists of languages in Meillet and Cohen, Les langues du monde (Paris, 1924), and E. Kieckers, Die Sprachstämme der Erde (Heidelberg, 1931), are much more detailed as to dialect names, and often enough the names cannot be identified even in a general way with those on the present map.

It would seem then that reproduction of Loukotka's map might be useful. But the original author's priority and the expense involved make such a step inadvisable. The best substitute under the circumstances is to classify and publish the list of language names.

0.2. The matter of classification is a real difficulty. For South America it can be said, I believe, that nothing even approaching Powell's classification for North America north of Mexico (BAE-R7 [1885–6], Washington, 1891) exists. And until such a really good preliminary classification is achieved, no syntheses of the kind that have been made for North America can even be attempted.

In the present list, then, I have simply adopted Loukotka's groupings, although I am aware that some of them could well be modified.

After the problem of classification, the next, and for practical purposes more difficult, problem is that of the spelling of the names. There is a great deal of synonymy in South America, and this is complicated by the use of different spelling systems—Spanish, Portuguese, 'phonetic', and so on.

Loukotka's spellings are all in the kind of phonetic (or rather pseudo-phonetic) orthography affected by many European students of American Indian languages; this sort of orthography has little if any validity, since it usually represents merely a respelling with unusual symbols of the Europeanized names by which the languages are known in the country where they are spoken; in Brazil all native names are more or less adapted to Portuguese, and the spelling of a name as, let us say, *Chicriabá*, is certainly more sen-

sible than as *Šikriabá;* the latter is not in the regular orthography of any language, and it is certainly no closer a representation of the actual sound of the native name than is the Portuguese spelling. It is as if one suddenly decided to write *Šoní* instead of *Shawnee*, or *Ozaž* instead of *Osage* (the latter was actually done in Meillet and Cohen, so that one knowing the language as /ówsèyj/ would never recognize it).

In preparing the present article, I have made a tracing of Loukotka's map, and have respelled all the names as far as possible in terms of ordinary Portuguese orthography. For those tribes included in the already published volumes of the Handbook of South American Indians (BAE-B143, v. 1) the spellings used there are either adopted or cross-referenced. The symbols used by Loukotka were replaced as follows: *c* by *ts*, *č* by *tch*, *dʸ* by *dy*, *g* before *e* and *i* by *gu*, *k* by *qu* before *e* and *i* and by *c* elsewhere, *ň* by *nh*, *s* between vowels by *ss*, *š* by *ch*, *w* by *u*, *y* by *i* (except after *i*), *ž* by *g* before *e* and *i* and by *j* elsewhere; *h* and umlauted vowels were retained; the acute accent was retained only in accordance with Portuguese spelling rules; the few names for which English forms exist were replaced by the latter.

Only a few synonyms have been noted, in parentheses with an equal sign after the adopted spelling.

0.3. It should be noted that the languages along the Atlantic Coast from the mouth of the Amazon south, as well as others in southern Brazil, are now extinct, but otherwise the map and the present list are contemporarily correct, as far as they go. A few languages known to be extinct are here marked with a dagger (†).

The first list below (1) is an alphabetical one of all the language names found on the map, in the Portuguese spelling I have adopted (with the few synonyms included cross-referenced to the preferred form), with indication by means of an abbreviation in square brackets of the family to which the language is assigned (the abbreviations being expanded at their proper alphabetical place; a name followed by the word *languages* is that of a group or family). The general location of a language (but not of groups or families) is shown by the name of the Brazilian state or states (not shown on the map) in which it is found, in italics after the family abbreviations.

There follows (2) a list of families and isolated languages, in alphabetical order, the languages under each family being listed alphabetically after the family name. Those who have seen my 'A Bibliographical classification system for linguistics and languages' (SIL3.54–108, 1945, and 4.1–50, 1946) will note that there is considerable difference between the present listing by families and the pertinent parts of that listing (p. 106–7); it is not improbable that the present list is more accurate, and I hope to use it, with such other data as become available, to make a revision of the classification at some future date.

1. Alphabetical list of Indian languages of Brazil.

Acroá [Gê]. *Baía, Minas Gerais.*
Adzaneni [Ar.]. *Amazonas.*
Amahuaca [Pa.]. *Acre.*
Anamari [Cat.]. *Amazonas.*
Anambe [TG]. *Pará.*
Anunzé [Nh.]. *Mato Grosso.*
Apalai [Car.]. *Pará.*
Apapocuva [TG]. *Paraná.*
Apiaca [TG]. *Mato Grosso.*
Apingui [Car.]. *Pará.*
Aponegicran (= Apányecra) [Gê]. *Maranhão.*
Ar.: Arawak languages.
Arara [Car.]. *Amazonas, Pará.*
Ararandeuara [TG]. *Pará.*
Aráua [Ar.]. *Amazonas.*
Arawak languages.
Are [TG]. *Paraná.*
Ariquem. *Guaporé Terr.*
Aruan [Ar.]. *Pará, Amapí Terr.*
Atorai [Ar.]. *Rio Branco Terr.*
Aueicoma [Ca.]. *Santa Caterina.*

Auití [TG.]. *Mato Grosso.*
Bacairí [Car.]. *Mato Grosso.*
Baré [Ar.]. *Amazonas.*
Bo.: Bororo languages.
Bohura [Mu.] *Amazonas.*
Bororo [Bo.]. *Mato Grosso.*
Bororo languages.
Botocudo. *Minas Gerais, Espírito Santo.*
Ca.: Caingang languages.
Cachináua [Pa.]. *Acre, Amazonas.*
Caduveo [Gua.]. *Ponta Porã Terr.*
Cadyurucré [Ca.]. *Paraná.*
Cai.: Cairiri languages.
Caiapo (= Cayapó) [Gê]. *Mato Grosso, Pará.*
Caingang, Central [Ca.]. *Paraná.*
Caingang, Eastern [Ca.]. *São Paulo.*
Caingang, Northern [Ca.]. *São Paulo.*
Caingang, Southern [Ca.]. *Rio Grande do Sul, Santa Caterina.*
Caingang languages.
Cainguá (= Cayuá) [TG]. *Ponta Porã Terr., Iguaçu Terr., Paraná.*
Cairiri [Cai.]. *Rio Grande do Norte, Paraíba, Pernambuco.*
Cairiri languages (= Cariri).
Cam.: Camacan languages.
Camacan [Cam.]. *Minas Gerais.*
Camacan languages (= "Eastern Gê").
Camaiura [TG]. *Mato Grosso.*
Came [Ca.]. *Iguaçu Terr.*
Canamaré [Cat.]. *Acre, Amazonas.*
Canamari [Ar.]. *Acre, Amazonas.*
Canauari [Pa.]. *Acre.*
Canoeiros [TG]. *Goiás.*
Capanagua (= Capanáua) [Pa.]. *Acre.*
Capiecran [Gê]. *Maranhão.*
Capochó [Ar.]. *Amazonas.*
Car.: Carib languages.
Cara(d)já (= Caraya). *Pará, Mato Grosso, Goiás.*
Caraho [Gê]. *Goiás.*
Cari [Pa.]. *Amazonas, Guaporé Terr.*
Cariai [Ar.]. *Amazonas.*
Carib languages.
Carimé [Chir.]. *Rio Branco Terr.*
Cariri: *see* Cairiri
Carútana [Mach.]. *Minas Gerais.*
Cat.: Catuquina languages.
Catapolítani [Ar.]. *Amazonas.*
Catauian [Car.]. *Pará.*
Catauichi [Cat.]. *Amazonas.*
Catoquina de Gregorio [Pa.]. *Amazonas.*
Catuquina [Cat.]. *Amazonas.*
Catuquina languages.
Catuquinarú [TG]. *Acre.*
Cauahíb [TG]. *Mato Grosso.*
Cauichana [Ar.]. *Amazonas.*
Cayapó: *see* Caiapó.
Cayuá: *see* Cainguá.
Charrua: *see* Tcharrua.
Chavante [Gê]. *Goiás.*
Cherente [Gê]. *Goiás.*
Chetá [TG]. *Paraná.*
Chicriaba† (= Shacriabá) [Gê]. *Minas Gerais.*
Chipáia [TG]. *Pará.*
Chiquiana [Car.]. *Pará.*
Chiquito: *see* Tchiquito.
Chir.: Chiriana languages.
Chiriana languages.
Chiriana [Chir.]. *Rio Branco Terr.*
Chocléng [TG]. *Santa Caterina.*
Co.: Coroado languages.
Cocozu [Nh.]. *Mato Grosso.*
Coe. *Amazonas.*
Coroado languages.
Coroados [Co.]. *Minas Gerais, Espírito Santo.*
Cororo [Co.]. *Minas Gerais.*
Cradaho [Gê]. *Pará.*
Crao [Gê]. *Maranhão.*
Crengê [Gê]. *Maranhão.*
Crichana [Car.]. *Amazonas.*
Cuchitíneri [Ar.]. *Acre.*
Cucura. *Mato Grosso.*
Culino [Pa.]. *Amazonas.*
Cuniba [Ar.]. *Amazonas.*
Curina [Ar.]. *Amazonas.*
Curuáia [TG]. *Pará.*
Custenau [Ar.]. *Mato Grosso.*
Cutacho [Cam.]. *Minas Gerais.*
Dessana [Tu.]. *Amazonas.*
Eoshavante: *see* Chavante.
Galibi [Car.]. *Amapí Terr.*
Gê (= Ge) languages.

Geicoț (= Jeico) [Gê]. *Piauí, Pernambuco.*
Gua.: Guaicurú languages.
Guaicurúț [Gua.]. *Ponta Porã Terr.*
Guaicurú languages.
Guajajara [TG]. *Maranhão.*
Guaná [Ar.]. *Mato Grosso.*
Guatchíț [Gua.]. *Mato Grosso.*
Guató. *Mato Grosso.*
Hohodene [Ar.]. *Amazonas.*
Huari. *Guaporé Terr.*
Iaimiri [Car.]. *Amazonas.*
Iamanadi [Ar.]. *Amazonas.*
Iaminãua [Pa.]. *Acre.*
Iaruma [Ar.]. *Amazonas.*
Iaté. *Alagoas.*
Iaulapiti [Ar.]. *Mato Grosso.*
Ipeca [Ar.]. *Amazonas.*
Ipurina [Ar.]. *Amazonas, Guaporé.*
Iumana [Ar.]. *Amazonas.*
Iuri [Car.]. *Amazonas.*
Iuruna [TG]. *Mato Grosso.*
Jeicó: *see* Geicó.
Ma.: Macu languages.
Macamecran [Gê]. *Goiás, Baía.*
Mach.: Machacali languages.
Machacali (= Mashacali) [Mach.]. *Espírito Santo.*
Machacali languages.
Machubi. *Guaporé Terr.*
Macu [Ma.]. *Amazonas.*
Macu languages.
Macuni [Mach.]. *Minas Gerais.*
Macussi [Car.]. *Rio Branco Terr.*
Madiha [Ar.]. *Acre.*
Manajo [TG]. *Pará.*
Manao [Ar.]. *Amazonas.*
Mandauaca [Ar.]. *Amazonas.*
Manitsáua [TG]. *Mato Grosso.*
Malali [Mach.]. *Minas Gerais.*
Mapididian [Ar.]. *Pará.*
Marauá [Ar.]. *Amazonas.*
Maráuan [Ar.]. *Amapí Terr.*
Maruba [Pa.]. *Amazonas.*
Mashacali: *see* Machacali.
Maué [TG]. *Amazonas.*
Máulieni [Ar.]. *Amazonas.*
Matanauí [Mu.]. *Amazonas, Mato Grosso.*
Mecub [Gê]. *Pará, Mato Grosso.*
Mehín [Gê]. *Maranhão.*
Menien [Cam.]. *Minas Gerais, Baía.*
Minaur [Tch.]. *Rio Grande do Sul.*
Moi [Ar.]. *Mato Grosso.*
Mongóio [Cam.]. *Baía.*
Monocho [Mach.]. *Minas Gerais.*
Morique [Ar.]. *Amazonas.*
Mu.: Mura languages.
Mundurucú [TG]. *Pará.*
Mura [Mu.]. *Amazonas.*
Mura languages.
Nadõbõ [Ma.]. *Amazonas.*
Nahucuá [Car.]. *Mato Grosso.*
Nh: Nhambicuara languages.
Nhambicuara languages.
Ntogapid [TG]. *Mato Grosso.*
Nucuini [Pa.]. *Acre, Amazonas.*
Oiampi [TG]. *Amapí Terr.*
Oiana [Car.]. *Pará.*
Omagua [TG]. *Amazonas.*
Opáie. *Mato Grosso.*
Orari [Bo.]. *Mato Grosso.*
Otchucuiana [Car.]. *Baía.*
Otí. *São Paulo.*
Pa.: Pano languages.
Paioariene [Ar.]. *Amazonas.*
Palicur [Ar.]. *Amapí Terr.*
Palmela [Car.]. *Guaporé Terr.*
Pamari [Ar.]. *Amazonas.*
Panhame [Mach.]. *Minas Gerais.*
Pano languages.
Paraviyana [Car.]. *Amazonas.*
Paressí [Ar.]. *Mato Grosso.*
Parintintin [TG]. *Amazonas.*
Pariri [Car.]. *Pará.*
Passé [Ar.]. *Amazonas.*
Patacho (= Patasho). *Espírito Santo, Baía.*
Pauchi [Car.]. *Pará.*
Pauchiana [Car.]. *Rio Branco Terr.*
Pimenteira [Car.]. *Baía, Piauí.*
Piocobgê [Gê]. *Maranhão.*
Pirahã [Mu.]. *Amazonas.*
Poianáua [Pa.]. *Acre, Amazonas.*
Purec [Gé]. *Maranhão.*
Puri [Co.]. *Minas Gerais, Espírito Santo.*
Puruborá. *Guaporé Terr.*
Purucoto [Car.]. *Rio Branco Terr.*

Quencatagê [Gê]. *Maranhão.*
Quiniquinau [Ar.]. *Mato Grosso.*
Quipea [Cai.]. *Piauí, Ceará.*
Ramarama [TG]. *Mato Grosso.*
Ramcocamecran (= Ramcócamecra) [Gêl.] *Maranhão.*
Remo [Pa.]. *Amazonas, Acre.*
Rucúien [Car.]. *Pará.*
Sabúia [Cai.]. *Baía.*
Saparâ [Car.]. *Rio Branco Terr.*
Shacriabá: *see* Chicriabá
Suiá (= Suyá) [Gê]. *Mato Grosso.*
Tacunhapé [TG]. *Pará.*
Tagê [Gê]. *Maranhão.*
Tagnaní [Nh.] *Mato Grosso.*
Tamaindé [Nh.]. *Mato Grosso.*
Tapirapé [TG]. *Mato Grosso.*
Tariana [Ar.]. *Amazonas.*
Tauité [Nh.]. *Mato Grosso.*
Taulipang [Car.]. *Rio Branco Terr.*
Tch.: Tcharrua languages.
Tchap.: Tchapacura languages.
Tchapacura languages.
Tcharrua (= Charrua) [Tch.]. *Rio Grande do Sul.*
Tcharrua languages.
Tchiquito (= Chiquito). *Mato Grosso.*
Tchontaquiro [Ar.]. *Acre, Amazonas.*
Tembe [TG]. *Pará.*
Tereno [Ar.]. *Mato Grosso.*
TG: Tupi-Guarani languages.
Ticuna [Ar.]. *Amazonas.*
Torá [Tch.]. *Amazonas.*
Trio [Car.]. *Pará.*
Trumai. *Mato Grosso.*
Tu.: Tucano languages.
Tucano [Tu.]. *Amazonas.*
Tucano languages.
Tuchináua [Pa.]. *Amazonas.*
Tuiuca [Tu.]. *Amazonas.*
Tupí [TG]. *Rio Grande do Sul, Santa Caterina, Paraná, São Paulo.*
Tupinamba [TG]. *Espírito Santo, Baía, Sergipe, Alagoas, Pernambuco, Rio Grande do Norte, Ceará, Piauí, Maranhão, Pará.*
Turiuara [TG]. *Maranhão.*
Uaícana [Tu.]. *Amazonas.*
Uaieué [Car.]. *Pará.*
Uainuma [Ar.]. *Amazonas.*
Uanhám [Tchap.]. *Guaporé Terr.*
Uapichana [Ar.]. *Rio Branco Terr.*
Uaraicu [Ar.]. *Amazonas.*
Uarequena [Ar.]. *Amazonas.*
Uirina [Ar.]. *Amazonas.*
Umotina [Bo.]. *Mato Grosso.*
Uoiauai [Car.]. *Pará.*
Urubú [TG]. *Pará.*
Urupá [Tchap.]. *Guaporé Terr.*
Uürafed [TG]. *Mato Grosso.*

2. Alphabetical list of Indian language families, including isolated languages, in Brazil, with languages alphabetically under each family (cf. **0.3**).

Arawak languages: Adzaneni, Aráua, Aruan, Atorai, Baré, Canamari, Capocho, Cariai, Catapolítani, Cauichana, Cuchitíneri, Cuniba, Curina, Custenau, Guaná, Hohodene, Iamanadi, Iaruma, Iaulapiti, Ipeca, Ipurina, Iumana, Madiha, Manao, Mandauaca, Mapididian, Marauá, Maráuan, Máulieni, Moi, Morique, Paioariene, Palicur, Pamari, Paressí, Passé, Quiniquinau, Tariana, Tchontaquiro, Tereno, Ticuna, Uainuma, Uapichana, Uaraicu, Uarequena, Uirina.

Ariquem.

Bororo languages: Bororo, Orari, Umotina.

Botocudo.

Caingang languages: Aueicoma, Cadyurucré; Caingang—Central, Eastern, Northern, Southern; Came.

Cairiri languages: Cairiri, Quipea, Sabúia.

Camacan languages: Camacan, Cutacho, Menien, Mongóio.

Caradjá (= Caraya).

Carib languages: Apalai, Apingui, Arara, Bacairí, Catauian, Chiquiana, Crichana, Galibi, Iaimiri, Iuri, Macussi, Nahucuá, Oiana, Otchucuiana, Palmela, Paraviyana, Parirí, Pauchi, Pauchiana, Pimenteira, Purucoto, Rucúien, Saparâ, Taulipeng, Trio, Uaieué, Uoiauai.

Catuquina languages: Anamari, Canamaré, Catauichi, Catuquina.

Charrua: *see* Tcharrua.

Chiquito: *see* Tchiquito.

Chiriana languages: Carimé, Chiriana.

Coe.

Coroado languages: Coroados, Cororo, Puri.

Cucura.

Gê languages: Acroá, Aponegicran, Caiapó, Capiecran, Caraho, Chavante (= Eoshavante), Cherente, Chicriabá, Cradaho, Crao, Crengê, Geicó, Macamecran, Macub, Mehin, Piocobgê, Purec, Quencatagê, Ramcocamecran, Suiá, Tagê.

Guaicurú languages: Caduveo, Guaicurú, Guatchí.

Guató.

Huari.

Iaté.

Machacali languages: Carútana, Machacali, Macuni, Malali, Monocho, Panhame.

Machubi.

Macu languages: Macu, Nadöbö.

Mura languages: Bohura, Matanauí, Mura, Pirahá.

Nhambicuara languages: Anunzé, Cocozu, Tagnaní, Tamaindé, Tauité.

Opáie.

Otí.

Pano languages: Amahuaca, Cachináua, Canauari, Capanagua, Cari, Catoquina de Gregorio, Culino, Iamináua, Maruba, Nucuine, Poianáua, Remo, Tuchináua.

Patacho.

Puruborá.

Tchapacura languages: Torá, Uanhám, Urupá.

Tcharrua languages: Minuar, Tcharrua.

Tchiquito.

Trumai.

Tucano languages: Dessana, Tucano, Tuiuca, Uaícana.

Tupi-Guarani languages: Anambe, Apacocuva, Apiaca, Ararandeuara, Are, Auití, Cainguá (= Cayuá), Camaiura, Canoeiros, Catuquinarú, Cauahíb, Chetá, Chipáia, Chocleng, Curuáia, Guajajara, Iuruna, Manajo, Manitsáua, Maué, Mundurucú, Ntogapid, Oiampi, Omagua, Parintintin, Ramarama, Tacunhapé, Tapirapé, Tembe, Tupí, Tupinamba, Turiuara, Urubú, Uürafed.

LA PRENSA TARASCA DE PARACHO, MICHOACÁN, 1939–1940

R. H. Barlow

Azcapotzalco, D. F. Mexico

1. Introduction (by Norman A. McQuown)
2. Una lista de los impresos en idioma Tarasco[1]

1. The following bibliographical article details the publications, in the Tarascan language of the state of Michoacan, Mexico, of the Tarascan Press, publishing organ of the Tarascan Project, first Mexican native-language literacy project, which functioned for some fourteen months in 1939–40, under the directorship of Morris Swadesh, then in charge of the linguistic activities of the Mexican Department of Indian Affairs. Although the native-language literacy program was temporarily abandoned in Mexico late in 1940, it has begun to function again (since 1945), and is now well under way, with primers already prepared in Tarascan, Otomi, Maya, Nahuatl, and Nahuat.

2. Una lista de los impresos en idioma Tarasco.

2.1. Para el año 1939

1. Agosto 26. auán sapí ɸ'iuéri. [El conejito valiente]. Una hoja impresa por sólo un lado y plegada, lo que da 2 pgs. con el forro en blanco. 450 ejemplares. Este cuento del pueblo de Puácuaro, Mich.' fué escrito por M. Jesús Mendoza, y constituye la primera publicación de la Prensa Tarasca. Véase el núm. 24.

2. Septiembre 2. El Alfabeto Tarasco | "El modo de escribir la lengua | purépecha según lo ha establecido | el proyecto tarasco." 4 pgs. 800 ejemplares. Segunda publicación. Se reimprimió en Febrero de 1940. Se distingue la primera edición por el empleo de tinta azul solamente y la diversidad tipográfica de los símbolos ɸ y ŋ, siendo la ɸ más pequeña que las demás, y habiéndose confeccionado la ŋ limando a mano la q. (Consúltese asimismo el núm. 19.)

3. Septiembre 5. siudadánu | sitárisʌŋgaksʌ tat 'émbečani alumná- | etc. [Convocatoria a los padres de familia]. 1 hoja en 4°, impresa al reverso del texto castellano. Tercera publicación.

4. Septiembre 10. disposisióni léičeri éŋgaksʌ uétaɹinčka | mítini iámindu p'oɹépiča. | Disposiciones legales que necesitan | saber todos los indígenas | [Tomo I]. 22 pgs. 2000 ejemplares. Cuarta publicación. Véase también el núm. 18.

5. Septiembre 10. líbru | p'oɹépeča jimbó sʌránda | aʃíkua | ... (libro de léctura [*sic*] tarasco). 8 pgs. 2000 ejemplares. La quinta publicación.

6. Agosto-Septiembre. [Cartilla infantil de lectura]. 16 pgs. en 16mo. Se distribuía por "entregas" a los alumnos de las clases nocturnas. Está incompleta.

7. Octubre. ɸ'ejkutperakua mítini | [comprobante de alfabetismo]. 1 hoja de cartulina. 18 por 23 cms. Se tiró dos ediciones en el curso de un mes—la primera en cartulina blanca con los tipos divergentes anotados bajo el Núm. 2—y la segunda en cartulinas verde y rosa pálido.

[1] Agradezco la amabilidad del D. F. Rubín de la Borbolla al permitirme consultar el archivo de la Prensa Tarasca. Asimismo hago patente mi aprecio a los señores Pablo Velázquez G. y Adrián F. León por haberme facilitado los impresos de sus colecciones respectivas; así como mi gratitud al último de ellos por su ayuda en la revisión de las pruebas y en asegurar la corrección general en los datos.

Ya iniciados los trabajos del Proyecto Tarasco, el tiraje general fué de 2000 ejemplares. En casos de interés especial se subía a 3000, como para los Nos. 10 y 20, etc. El tamaño normal era el 8° [sobre 14 x 21.5 cms.], excepto donde se ha indicado lo contrario.

8. Octubre. naníŋga na úŋoka pára | semiá erákuni ɕiri jaɕíkueri | Cómo seleccionar la semilla del maíz. 10 pgs.

9. Octubre. p'aménčakueča tríjueri éŋgaksʌ | uétaɹinčka mítini p'oɹépiča. | Principales enfermedades del trigo. 6 pgs.

10. Octubre. sífilisi: | . . . | Cómo evitar y curar la sífilis. 6 pgs.

11. Noviembre. "jáŋaɹiri iɕʌ | jiŋgóni šéparini á" | precauciones con- | tra el agua sucia. 6 pgs.

12. Noviembre. k'újčakua | ásʌ jurájkukuri íni | p'aménča jiŋgóni | prevención y cuida- | dos de la difteria. 4 pgs.

13. Noviembre. "éŋgari kauíčekaa ásʌ juráj- | ku éska čti uáɕkini ɕʌɕʌntoka" | Si eres borracho, evita que tus | hijos sigan tu ejemplo. 6 pgs.

14. Noviembre. "šéparini p'amén- | čakua móŋarikua | jiŋgóni" | Precauciones contra la rabia. 6 pgs.

15. Noviembre. perénɕajúkua: | . . . | cuida a tus hijos de | la tosferina y te cui- | darás también a tí | mismo de su contagio. 6 pgs.

16. Noviembre. kolméneča | . . . | Tener cría de abejas y | cuidarla | bien es pro- | vechoso pa- | ra tí y para | todos. 4 pgs.

17. Diciembre. "ásʌ méni . . . | . . . | [terɕíkua, o la lepra]. 16 pgs.

18. Diciembre. disposisióni léičeri éŋgaksʌ uéta- | ɹinčka mítini iámindu p'oɹepiča. | Disposiciones legales que nece- | sitan saber todos los indígenas. | 2° tomo. 74 pgs. sueltas en forro de cartulina. Se distribuía en Febrero de 1940.

2.2. Para el año 1940

19. Enero. El Alfabeto Tarasco | "El modo de escribir la lengua purépecha según lo ha establecido el Proyecto Tarasco" | Departamento de Asuntos Indígenas | La Prensa Tarasca | Paracho, Michoacán | Enero. Mil Novecien- | tos Cuarenta. 4 pgs. rojo y azul. Segunda edición, impresa en azul y rojo, con todas las letras uniformes. Yéase el núm. 2.

20. Enero. p'oɹé kuirúŋaɹikua [Los símbolos del tarasco]. 6 pgs.

21. Enero. "tífuni jiŋóni . . . | . . . | Precauciones contra el tifo." 4 pgs.

22. Enero. jukápaɹakua éŋikua 1 hoja 4°.

23. Marzo. manárakua: | "šéparini í jasʌ p'aménčakua jiŋ- | góni pára nóri | uaɹini." | Precauciones útiles en el cuidado del palaudismo. 6 pgs.

24. Marzo. publicaciones | de la prensa tarasca | folletos de divulgación popular | publicados de agosto 1939 a enero 1940. | departamento de asuntos indigenas | de la república de méxico | méxico 1940 ||

Libro formado recopilando en el siguiente orden los números 11, 12, 13, 10, 17, 8, 16, 9, 4, 18, y 5*

* El ejemplar que examinamos no contiene el 16 y 31; figuran, sin embargo, en el índice.

A estos se les ha agregado un apéndice de traducciones al español, de 28 páginas y cuatro paginas de portada, mas índice e introduccion. Tiene forro de papel anaranjado.

Copiamos en seguida la introduccion:

"ofrecemos este tomo, que consta de las primeras publicaciones de la prensa tarasca, como muestra de los que hemos venido haciendo para poner al alcance de los indígenas los conocimientos modernos sobre la proteccion de la salud, las técnicas de la agronomía, los atriculados de la ley más importantes para eïlos, y materiales culturales en general. entre las primeras publicaciones se incluyó muy poco que fuese meramente de lectura ligera—los cuentos del librito de lectura. ahora, en el mes de marzo de 1940, se ha comenzado a tirar una colección de cuentos nativos para llenar esta deficiencia.

los folletos de salubridad son traducciones de los del departamento de salubridad. el material agricola y legal fué preparado por expertos en dichos ramos del departamento de asuntos indigenas. solo los cuentos fueron redactados directamente en tarasco,

por ejemplo los periódicos murales de paracho y otros pueblos, muestran la completa factibilidad de tal empleo.

los traductores y redactores son maestros nativos, que trabajan partiendo del principio de que siempre deben expresarse en la lengua del pueblo y de que deben evitarse imitaciones del español que resultarian articifiales en la lengua nativa. en la traduccion, se esfuerzan en reproducir la idea y no en tratar de encontrar una palabra equivalente a cada una de las del original. las palabras de origen español se emplean sin vacilacion si ya están en uso general. (tales palabras no demuestran ninguna inferioridad, como pretenden algunas personas, al igual de que el uso de muchísimas palabras de origen inglés, francés, azteca, árabe, griego, latín, etc. no caracteriza al español como sublengua). se evitan innovaciones que no se entenderían, sean ellas palabras tomadas del español o composiciones nativas. esta norma se descuidó solamente en la primera publicación, que hicimos sobre disposiciones legales.

el alfabeto tarasco es el alfabeto español, con correcciones y adiciones. le hemos quitado tales inconsecuencias como el uso de letras que no suenan (la *h*), letras que se duplican en su función (*b* y *v*, por ejemplo), letras dobles que representan un solo sonido (por ejemplo *qu*, *ch*, *rr*). le hemos suprimido las mayúsculas por que duplican la función de las minúsculas. ademas hay signos especiales para los sonidos del tarasco que no ocurren en el español. mas o menos como en el español son: a b d e i j k l m n o p r s t u. son diferentes:

g que tiene siempre el sonido de *gato*. (ga ge gi go gu equivalen a ga gue gui go gu del espanol).

č equivale al la *ch* del espanol.

ʗ suena aproximadamente *ts*.

ř equivale a la *rr* del espanol.

ɪ un sonido intermedio entre *r* y *l*.

ʌ una vocal que suena más o menos como la de *bird* en el inglés de boston.

p' t' k' ʗ' č' consonantes aspiradas, como las del aleman o inglés, que contrastan con las p t k ʗ č no aspiradas; por ejemplo, k'uini 'dormir', kuini 'pajaro'.

25. Marzo. uandánʗkueča | p'oɪépičeri má- | maru iréta a- | nápuečani. | Cuentos ta- | rascos de las | diversas regio- | nes purépechas. 40 pgs. con cártula de papel delgado. Primer tomo de cuentos. Incluye en las páginas 15–17 el núm. 1, con ligeras variantes lingüísticas. Contiene los cuentos siguientes:

1. k'uaki ka kúmiuáʗʌ	1–2
2. pipíču ka t'aɪéču	2–4
3. ma tumbí ka ma uáʗʌ	4–14
4. auáni sapí ʗ'iuéri	15–17
5. misítueri ka šarísʌčeri	17–19
6. uandánʗkua sʌɪúki ka jeiáki péresi	19–21
7. auáni ka jiuáʗʌ	22–33
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9. jiuáʗʌ ka ma kúmu	36–37
10. tatá auáni ka naná kúmiuáʗʌ	38–40

26. Abril. ikiámsʌkua: |...| Cuidados de la tuberculosis. 10 pgs.

27. jimbáŋi úkua p'oɪéčeri | má uéšuɪini | 1939–1940 | pirékueča p'oɪé jimbó [canciones en Tarasco]. 20 pgs. de texto, con carátula.

28. Septiembre. uandánʗkueča p'oɪépičeri mámaru | irétečeri éŋgaksʌ | p'oɪépiča uandájka | karákata pára sʌránda aɪini | (ʗimánda karákata). 102 pgs. sueltas en forro.

Segundo tomo de cuentos. Contiene los cuentos siguientes:

1. ʗ'irákuečeri uandánʗkua, 1–2
2. iúmu jaiáki sapíɪatiča, 3–5
3. kuéntusi tatá agápčakueri, 5–6
4. t'aɪépitiri ka kuʗʌmitiri, 7–9
5. ʗimáni amígueča ka ma ósu, 10–11
6. uákasʌ ka ʗ'inʗúni, 11–12
7. tanímu ermánueča, 13–14
8. piríči sapíču. sériri, 15–16
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10. jiuáʗʌ ka ma t'aɪéču, 18–19
11. sesásʌ eráʗikua ma, 20–21
12. karíči eráŋgueri ma, 22–23
13. ʗʌʗʌkiri ka uápuri, 24–25

14. uandánɕkua, 26–27
15. "uáɕʌ no kašúmbitieri má", 28–29
16. jaiáki ka ačéeti ríku uájpa jiŋgóni, 30–31
17. tumbí šépitiri, 32–44
18. ačá belénueri, 35–39
19. auanítueri miánɕkua, 40–41
20. uandánɕkua. kuíniri ka tatákeri ma, 42–43
21. ma ambúsʌri, 44–45
22. ma auáni ka ma kúmu, 46–47
23. tembúŋguiričeri ka uájpeča, 48–50
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25. ma sapíču ka ɕimáni kurísʌča, 64
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27. ma ačámasʌ ka ɕimáni kuiníkiča, 66–67
28. ma tokójiteri ka ma tokójkuiri, 68–69
29. ma t'aɹéču ka ma jiuáɕʌ, 70–71
30. ma tumbí ka ma uáɕʌri, 72–74
31. ačáti šépiti má, 75–77
32. číbu kuɕʌ ma uájpeča, 78–81
33. ma sʌurúka no sési jásʌ, 82–85
34. kauíkua ɕʌtpiristi, 86–89
35. tkúpu ka ma ɕíri, 90–91
36. ma karíči erangu čkuándera, 92–93
37. ačá petú tóntu, 94–97
38. ma uaɹúriri, 98–102

29. Octubre. [Hoja con texto tarasco, referente a exámenes]. Tiempo | No. de asistencias | Nombre de la Comunidad. En 4°.

MANUSCRIPTS ON MIDDLE AMERICAN LANGUAGES AND CULTURES

Sol Tax

University of Chicago

The National Research Council, through its Committee on Latin American Anthropology, is sponsoring the publication in microfilm of a series of manuscript studies on Middle American Linguistics and Cultural Anthropology. The manuscripts are processed by the University of Chicago Library under the title: Microfilm Collection of Manuscript Materials on Middle American Cultural Anthropology; they are available to individuals, as well as to university and museum libraries and other institutions, at cost. Inquiries concerning subscriptions should be sent to the Microphotographic Laboratory of the University of Chicago, Chicago 37, Illinois. Inquiries concerning manuscripts suitable for inclusion in the series should be addressed to Sol Tax, Department of Anthropology, University of Chicago.

Manuscripts in the Collection include the following:

1. An Ethnological Study of the Ixil Indians of the Guatemala Highlands, by Jackson Steward Lincoln. The full posthumous report on field work done in Nebaj, Chajul, and Cotzal, in 1940–41; prepared for publication by Mrs. Lincoln, with a foreword by Ruth Benedict, Columbia University. Alphabetical index. Pp. 1′–48′; 1–251; 15 plates; 2 maps.

2. San Luis Jilotepeque: A Guatemalan Pueblo, by Melvin M. Tumin. The full field notes of a study made in 1942–43 in a Pocoman-speaking community in Eastern Guatemala, with the cooperation of the Carnegie Institution of Washington Middle American Research Program. Content index. Pp. i–xlv; 1–848; 2 maps.

3. Ethnographic Materials on Agua Escondida, by Robert Redfield. Roughly ordered original field notes on a Ladino community near Lake Atitlán in Guatemala. Studied in 1938–39 and 1940–41, as part of the Carnegie Institution of Washington Middle American Research Program. Content index. Pp. 1′–38′; 1–688; 7 genealogies; 2 maps; census cards.

4. Notes on San Antonio Palopó, by Robert Redfield. Roughly ordered original field notes on a Cakchiquel-speaking community on the shore of Lake Atitlán in Guatemala. Studied in 1940–41, as part of the Carnegie Institution of Washington Middle American Research Program. Content index. Pp. 1′–13′; 1–379; 1 map; census cards.

5. Monografía sobre los Tzeltales de Tenejapa, by Fernando Cámara Barbachano. Original field notes (roughly ordered by their author) of a study made in 1943–44 in Chiapas, México, as part of the joint expedition of the Instituto Nacional de Antropología e Historia (México), the State of Chiapas, and the University of Chicago, (with a grant supplied by The Viking Fund), and with the cooperation of the Carnegie Institution of Washington. Content index. Pp. 1′–34′; 1–522; 3 maps.

6. Monografía de los Tzotziles de San Miguel Mitontik, by Fernando Cámara Barbachano. Original field notes (roughly ordered by their author) of a study made in 1944 in Chiapas, México, as part of the joint expedition of the Instituto Nacional de Antropología e Historia, the State of Chiapas, and the University of Chicago, (with a grant supplied by The Viking Fund), and with the cooperation of the Carnegie Institution of Washington. Content index. Pp. i–xii; 1–90.

7. Notas sobre la Etnografía de los Indios Tzeltales de Oxchuc, by Alfonso Villa Rojas. Original field notes on a community in

Chiapas, México, roughly ordered by their author. The result of field work of 1942–43 and 1943–44, as part of the Carnegie Institution of Washington Middle American Research Program. Content index. Pp. 1′–49′; 1–791; map; 19 genealogies; text illustrations.

8. Informe de Cancuc, by Calixta Guiteras Holmes. Original field notes (organized and retyped by their author) of a study made in 1944 in Chiapas, México, as part of the joint expedition of the Instituto Nacional de Antropología e Historia, the State of Chiapas, and the University of Chicago, (with a grant supplied by The Viking Fund), and with the cooperation of the Carnegie Institution of Washington. Content index. Pp. 1–30; i-iv; 1–337; map; 3 genealogies.

9. Materials on the Huastec Language, by Manuel J. Andrade. The full posthumous field notes of work done for the Carnegie Institution of Washington in 1930 and 1933 among the Potosí and Vera Cruz Huastec Indians of Mexico. Prepared for publication by Mark H. Watkins on the basis of previous organization by A. H. Halpern. With a general introduction to all of the Andrade materials (Nos. 9, 10, 11, and 12) by Mark A. Watkins. Alphabetical index. Pp. i–ix, 1–827; plate.

10. Materials on the Mam, Jacaltec, Aguacatec, Chuj, Bachahom, Palencano, and Lacandon Languages, by Manual J. Andrade. The full posthumous field notes of work done for the Carnegie Institution of Washington in 1931, 1935, and 1937 among Indians of Maya languages in Chiapas and western Guatemala, including Mam texts transcribed by the Rev. and Mrs. H. D. Peck and the Rev. E. F. Sywulka from recordings made in the field. Prepared for publication by Mark H. Watkins on the basis of previous organization by A. H. Halpern. With an introduction by Mark A. Watkins. Alphabetical index. Pp. i–xi, 1–1152.

11. Materials on the Quiché, Cakchiquel, and Tzutuhil Languages, by Manuel J. Andrade. The full posthumous field notes of work done for the Carnegie Institution of Washington in 1935–1936 in central Guatemala. Includes Cakchiquel texts written and translated by Juan de Dios Rosales, and an English summary of the texts by Gertrude Tax. Prepared for publication by Mark H. Watkins on the basis of previous organization by A. H. Halpern. With an introduction by Mark A. Watkins. Alphabetical index. Pp. i–ix, 1–942.

12. Materials on the Kekchi and Pokomam Languages, by Manuel J. Andrade. The full posthumous field notes of work done for the Carnegie Institution in 1936 and 1938 (?) in central and northern Guatemala. Prepared for publication by Mark H. Watkins on the basis of previous organization by A. M. Halpern. With an introduction by Mark A. Watkins. Alphabetical index. Pp. i–v, 1–474.

13. The Towns of Lake Atitlán, by Sol Tax. Roughly ordered original field notes on the Indian communities bordering Lake Atitlán, in Guatemala, collected in 1935 and 1936 in a preliminary survey as part of the Carnegie Institution of Washington Middle American Research Program. Content index. Pp. i–xiii, 1–337; map; chart.

14. Informe de San Pedro Chenalhó, by Calixta Guiteras Holmes. Original field notes (organized and retyped by their author) of a study made in 1944 in Chiapas, Mexico, as part of the joint expedition of the Instituto Nacional de Antropología e Historia, the State of Chiapas, and the University of Chicago, (with a grant supplied by The Viking Fund), and with the cooperation of the Carnegie Institution of Washington. Content index. Pp. 1–25; i–iv; 1–367; 2 maps; 7 charts.

Microfilm copies of this collection are now in the libraries of several institutions in the United States, Mexico and Central and South America, namely, the American Museum of Natural History Library, New York, New York; American Philosophical Society Library, Philadelphia, Pennsylvania;

Brown University Library, Providence, Rhode Island; Carnegie Institute, Cambridge, Massachusetts; Columbia University Library, New York, New York; Cornell University Library, Ithaca, New York; Escuela Nacional de Antropología, Mexico, D. F., Mexico; Instituto de Antropología e Historia, Guatemala, Central America; Instituto Ind. Nacional, Guatemala, Central America; Library of Congress, Washington, D. C.; Newberry Library, Chicago, Illinois; New York Public Library, New York, New York; New York University Library, New York, New York; Northwestern University Library, Evanston, Illinois; Ohio State University Library, Columbus, Ohio; Peabody Museum of Harvard University, Cambridge, Massachusetts; Southwest Museum Library, Los Angeles, California; Stanford University Library, Palo Alto, California; Tulane University Library, New Orleans, Louisiana; University of California Library, Berkeley, California; University of California Library, Los Angeles, California; University of Chicago Library, Chicago, Illinois; University of Minnesota Library, Minneapolis, Minnesota; University of New Mexico Library, Albuquerque, New Mexico; Universidad Nacional de San Marcos, Lima, Peru; University of Texas Library, Austin, Texas; University of Washington Library, Seattle, Washington; Wayne University Library, Detroit, Michigan; University of Wisconsin Library, Madison, Wisconsin.

REVIEWS

MORPHOLOGY: THE DESCRIPTIVE ANALYSIS OF WORDS. By Eugene A. Nida. University of Michigan Publications. Linguistics II, Ann Arbor, Michigan. University of Michigan Press, 1946. pp. xii 221.

1. Nida's new book is primarily designed to serve as a textbook for students of linguistic structure. His aim is to show how the morphology of languages may be investigated and stated in published grammars.[1] He has organized his demonstrations according to the technical terminology of American descriptive linguistics in such a way as to include most of the principles according to which practising linguists arrange their materials. No new theory or procedural outline for morphological analysis is intended. Independent of teaching purposes any book of this sort should be of general interest to the linguist for the nature of the definitions and other statements necessarily contained in it, and for the solution of the ever-present problems of logical consistency which confront writers of works on linguistic method.

2. Nida's book is eclectic in that it presents terminology, procedures, and theory as derived mainly from Bloomfield and Sapir. The chief innovation is the employment of sets of invented language sequences as the crude data for exercises in morphological analysis. This alternative to the handling of genuine language corpora makes it easy to create exercises which illustrate exactly what the teacher wishes and no more than that. It should of course be stated that the device is not strictly necessary since the total amount of data given for each exercise is not great; form-sets capable of yielding simple and symmetrical formulations can just as readily be extracted from the data of existing languages. Such form-sets may be selected to the exclusion of difficult and complicating problems. A procedure which extracted restricted data from natural languages would be logically interesting, in any event, since the corpus of data representing a given language may theoretically always be very large or very small, widely representative of the obtainable whole or narrowly restricted to incompletely comparable items. In any case, no matter what restrictions operate upon it, the corpus may be regarded as susceptible to analysis. Sequence units (phonemes, phoneme sequences, morphemes, and larger units) need not be expectably the same for the independent analyses of large and small corpora of the data of one and the same language. Also, obviously, a small corpus may just as well be selected from a greater quantity of material as it may come into existence by stopping the collecting process when only a few forms have been obtained. If selection is made, it may serve any pedagogical purpose desired. These observations are not offered as a criticism of the practise of compounding artificial language data as represented in Nida's book. But the possibilities of genuine languages as sources for the type of exercise material which appears in it need not be overlooked.

3. The following list of chapter headings will give an idea of the subject coverage of the book: 1. Morphological Processes; 2. Phonological Processes; 3. Constituents of Words; 4. Features of Description; 5. Form-classes; 6. Substitutes; 7. Criteria for Determining Words; 8. Collection of Data; 9. Semantic Value of Morphological Items;

[1] Grammars recommended by Nida as guides for the student are (189): M. R. Haas, Tunica, Handbook of American Indian Languages 4:1, New York, 1940; S. Newman, Yokuts Language of California, VFPA 2, New York, 1944; M. H. Watkins, A Grammar of Chichewa, LSA Diss. 24, Philadelphia, 1937; W. L. Wonderly, Notes on Zoque Grammar, Glendale, Cal., 1943; C. F. Voegelin, Tübatulabal Grammar, UCPAAE 34:2, Berkeley, 1935; C. F. Voegelin and M. E. Ellinghausen, Turkish Structure, JAOS 63:1, 1943.

10. Morphological Section of the Grammar; Appendix. A few statements illustrating various points are now quoted and numbered for reference below: 1. "Morphology deals with *words*. Words are conveniently defined as minimal free forms, that is to say, the smallest units that may be spoken alone." (p. 1); 2. "All languages, so far as is known, construct words." (p. 1); 3. "The constituency of a morphological item must be stated in terms of immediate constituents... Each immediate constituent must be described in terms of form and class. For example, the form of the first immediate constituent of the word *boys* is *boy*. The class of this form is 'singular noun'." (p. 89); 4. "The construction of the grammar of a language is essentially the grouping of sets of items that have certain common characteristics and the showing of the interrelationships of these classes of forms." (p. 102); 5. "All languages that have been scientifically analyzed have been found to contain a functional class of morphological items that substitute for other classes of forms... The most common types of substitutes are the pronouns. These words substitute, not for objects, but for a class of words, and, as the term implies, for a particular class of words, namely, nouns." (p. 138); 6. (on Spanish canto and yo canto) "The -o final morpheme in canto is a substitute for the name of the speaker." (p. 142); 7. "The substitutes are signals for signals. Words such as *man*, *horse*, and *boy* are signals for certain practical-world objects." (p. 138); 8. "All morphological items have some semantic value, that is to say, they have some meaning. This meaning may be quite difficult to define, but nevertheless it is present." (p. 166).

4. The statements reproduced in **3** relate to some of the most persistent theoretical cruces in descriptive linguistics, viz.: definition of the word (1); universality of the word [± absoluteness of linguistic phenomena, absoluteness of correspondence between linguistic taxonomy and natural phenomena] (2); nature, logical basis, and application of "immediate constituents"[2] (3); analytic coverage of grammars (4); representation of identities and substitutabilities among linguistic forms (5) including ideas of pleonasm (6) and ideas of interpersonal reactions [sociology, psychology] (7); the assignment of relevancy for linguistic analysis to meaning on whatever level of definition (8). These are only some of the problem areas which receive treatment in Nida's book. The whole matter of strict consistency in analytic method as applied to the investigation of language structure remains to be resolved. The interdependence or non-interdependence of form and meaning, with all considerations of meanings as collectable crude data, and the techniques for attesting meanings relative to certain formal units, constitutes at present perhaps the most difficult (or least promising) field for future development.

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A LÍNGUA DO BRASIL. By Gladstone Chaves de Melo. Rio de Janeiro, Livraria Agir, 1946. 187 p.

In Brazil there has been much the same kind of discussion of whether there is a "Brazilian language" that we have had about an "American language". There are those who find Brazilian Portuguese a new and different thing from the Portuguese of Portugal; and at the other extreme there are those who decry "Brazilianisms" and call for strict standards of "correct" speech. All—or nearly all—the arguments have been based on emotion, national pride, prejudice, and other such subjective reactions, and very few of them on any attempt at objective evaluation of linguistic facts. Through many of the discussions has run the question of the influence of Indian languages—es-

[2] For a review of some of the logical difficulties attendant on defining immediate constituents see: R. S. Wells, Immediate Constituents, Lg. 23. 81-117 (1947).

pecially Tupi—on Brazilian Portuguese. There are those who find the origin of every difference from European Portuguese in some trait—usually very vaguely identified, if at all—of some equally vaguely identified variety of Tupi.

The author of the volume under review has set out to clear the old debris away, and to set up in its place an edifice founded on scientific linguistic observation. He treats his subject in a Preface (p. 9–10), eight chapters, a Final Explanation (167–70), a Bibliography (171–80), and an Index of names (181–3). The chapters are: 1, The Portuguese language in Brazil (11–32); 2, The Tupi influence (33–58); 3, The African influence (59–72); 4, The popular language (73–96); 5, Our pronunciation (97–106); 6, Language and style (107–18); 7, Our vocabulary (119–34); 8, The literary language (135–66).

There is everywhere modesty, good judgment, sound sense, and an acquaintance with the pertinent works of modern linguistics—American and European. We are told "the book is for non-specialists. Linguists will have nothing to learn from these poor pages. But I offer them also to the latter, since I ask their criticism." (10)

The first chapter discusses the background of the question. The extreme positions as well as the moderate ones are reviewed, and the sound conclusion is reached that Brazilian Portuguese is Portuguese, and that the differences from the language of Portugal are to be expected in terms of the variations in time and place, and are of the kind found everywhere.

Of special interest to us is the chapter on Tupi influence. It is well known that the Catholic missionaries used Tupi as the language for propagating their faith among the Indians of Brazil. We may suspect that the Tupi they used was a normalized and artificial language forced into European—especially Latin—grammatical categories, but until a great deal more work is done on existing Tupi-Guarani languages, the extent of the normalization cannot be determined (Chaves de Melo does not touch on this aspect of the problem). We know also that the Bandeiras (parties sent out to look for gold and other loot and slaves in early colonial days) used coastal Tupi-speaking Indians as guides, and gave Tupi placenames in many regions that were never inhabited by Tupi speakers. There are then in Brazil many placenames that embody, with greater or less fidelity, Tupi linguistic material. And in the general vocabulary of Brazilian Portuguese are to be found many words for animals, birds, and local material objects that are indigenous—and usually Tupi—in origin. But Chaves de Melo shows clearly and unequivocally that all the supposed grammatical results of Tupi influence are figments of the imagination; not only are all such phonological, morphological, and syntactic usages easily traceable to or explainable as developments from specific local and temporal forms of European Portuguese, but—more importantly—none of them can really be tied up with anything concrete in any specific form of Tupi.

In the discussion of African influences it is shown that the Pidgin Portuguese developed among negro slaves has penetrated here and there into popular and substandard speech in general, but Chaves de Melo implies that most of the pidginisms are direct results of tendencies already present in Portuguese dialects. In this he is undoubtedly right: so much that passes for pidgin or "creole" languages is merely substandard evolving West-European.

The remainder of the book is not of direct interest in the present review, but seems on the whole to be as sensible as these first few chapters. It will make salutary reading for the linguistic chauvinists of Brazil, and should be informative to all Romanic specialists.

Chaves de Melo makes a point that needs to be repeated and emphasized: colonial languages should be studied descriptively and for their own sake, and their own local

variations and developments need to be carefully and accurately noted. To this we can add that the languages of the native peoples on whom the colonial language has been imposed should be thoroughly recorded. Then, and only then, will it be possible to make scientifically valid studies of linguistic acculturation, in either or both directions. In studies based on such a method, there will be no room for emotionalism or nationalism. Chaves de Melo has done a service for popularization—in the best sense of the word—of good linguistic doctrine. The only caution one need add is that he is sometimes a little too normative and ethnocentric.

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MORPHOLOGY: THE DESCRIPTIVE ANALYSIS OF WORDS. By Eugene A. Nida. University of Michigan Publications, Linguistics, Vol. II. Ann Arbor: University of Michigan Press, 1946. Pp. xii, 221. $1.75.

SYNTAX: A DESCRIPTIVE ANALYSIS. By Eugene A. Nida. Summer Institute of Linguistics, 1946. Mimeographed, pp. iv, 114. $1.00.

PHONEMICS: A TECHNIQUE FOR REDUCING LANGUAGES TO WRITING. By Kenneth L. Pike. Summer Institute of Linguistics, 1946. Mimeographed, 2 vols. $4.00.* (Lithoprinted edition in preparation.)

TONE LANGUAGES: THE NATURE OF TONEMIC SYSTEMS WITH A TECHNIQUE FOR THE ANALYSIS OF THEIR SIGNIFICANT PITCH CONTRASTS. By Kenneth L. Pike. Summer Institute of Linguistics, 1945. Mimeographed, pp. 159. $1.50.* (In process of publication in letter press by the University of Michigan Press.)

PRONUNCIATION. By Kenneth L. Pike. Vol. I of An Intensive Course in English for Latin-American Students. Ann Arbor: English Language Institute, 1942. Pp. 123. (Out of print.)

DICTATION EXERCISES IN PHONETICS. By Eunice V. Pike. Summer Institute of Linguistics, 1946. Mimeographed, pp. 78, xiii. $1.00*

NOTES ON ZOQUE GRAMMAR. By William L. Wonderly. Summer Institute of Linguistics, 1943. Mimeographed, pp. 93. $1.50.*

BIBLE TRANSLATING: AN ANALYSIS OF PRINCIPLES AND PROCEDURES, WITH SPECIAL REFERENCE TO ABORIGINAL LANGUAGES. By Eugene A. Nida. New York: American Bible Society, 1947. Pp. vii, 362. $1.75.

TRANSLATOR'S COMMENTARY ON SELECTED PASSAGES. By Eugene A. Nida. Summer Institute of Linguistics, 1947. Mimeographed, pp. 145. $1.50.

LINGUISTIC INTERLUDES. By Eugene A. Nida. Summer Institute of Linguistics, 1947. Pp. 176. $0.90.

LINGUISTIC AND ETHNOGRAPHIC BIBLIOGRAPHY OF MEMBERS OF THE SUMMER INSTITUTE OF LINGUISTICS. (as of September 1947). Summer Institute of Linguistics, 1947. Pp. 8. $0.15.

This review is concerned with the linguistic textbooks and other book-length publications written to date by members of the Summer Institute of Linguistics, P. O. Box 880, Glendale 5, California.[1] Prices of those published by the Institute are shown above for the ones that are still available. Those marked with an asterisk are available in limited number only.

Nida's Morphology is a textbook developed in the classes of the Summer Institute of Linguistics and intended for use in courses in introductory descriptive linguistics. One of its features is the use of synthetic problems designed to give the student practice in handling language prob-

[1] To those here mentioned should be added two books already reviewed in IJAL: Phonetics, by Kenneth L. Pike (reviewed in IJAL 11.182–86 [1945]); The Intonation of American English, by Kenneth L. Pike (reviewed in IJAL 13.189–93 [1947]). Compare also the items reviewed in Miscellaneous Papers in IJAL 13.66–67 (1947).

lems of successively increasing complexity, but with data limited to material relevant to the type of problem being studied. The chapter headings will give some idea of the field covered: (1) Morphological Processes, (2) Phonological Processes, (3) Constituents of Words, (4) Features of Description, (5) Form-Classes, (6) Substitutes, (7) Criteria for Determining Words, (8) Collection of Data, (9) Semantic Value of Morphological Items, (10) Morphological Section of the Grammar. See now Preston's review in this issue of IJAL.

Nida's Syntax is a companion volume to his Morphology, "designed . . . to introduce a basic methodology by which the syntactic structure of any language may be analyzed." Illustrative material is mostly from English, with data from other languages to exemplify types of phenomena not found in English. As in Morphology, a series of simplified problems constructed on the patterns of actual languages are employed to give practice in structural analysis before the student undertakes the analysis of material in the field. Chapter 1 is introductory; chapter 2 discusses the descriptive features of syntactic units; chapter 3 treats principles used in the determination of immediate constituents. Chapter 4 is on the organization of syntactic data, and includes a number of hypothetical language problems.

Pike's Phonemics is likewise a text for classroom use, "to give to the student a methodology for reducing languages to writing, and to do so by means of graded exercises in language analysis." Some of these exercises are hypothetical language problems; others are from actual language materials but with data restricted to certain features. Although the approach is basically pedagogical, certain of the phonemic principles used are new contributions to the field. Part I of the work is a phonetic introduction with exercises. Part II, Analysis and Description of Phonemic Units, is divided into the following sections: The Value and Goals of Practical Phonemics, Analytical Procedures, Descriptive Procedures, Orthographical Procedures.

Tone Languages consists of three parts. In the first, there is postulated a classification of tone languages into two basic types: those with basic level tones and those with basic gliding tones. A third type is composed of languages with a combination of level and gliding tones. In part two, Pike gives a technique for overcoming the particular difficulties inherent in the analysis of contrastive but relative pitch, plus a method for finding the number of phonemic tones in the language. Part three contains a presentation of tonomechanical changes and grammatical tone changes, illustrated by Mixteco, in which there is much tone sandhi, and by Mazateco, in which there is an intricate system of tone fusion.

The Pronunciation volume includes an analysis of English intonation. The research materials in it have been revised and incorporated in Pike's book, The Intonation of American English.[2] The general content of the revised material includes a phonemic analysis of intonation, plus an analysis of intonational meaning in terms of speaker attitudes rather than in terms of correlation with grammar. The pedagogical materials in the volume have been rewritten and incorporated in An Intensive Course in English for Latin-American Students, by Charles C. Fries and staff (6 vols., revised. Ann Arbor: English Language Institute, 1943).

The exercises by Eunice Pike are drill materials designed for the use of instructors in phonetics classes. It was developed over a period of years in actual teaching situations, and incorporates items from a variety of languages as well as synthetic materials.

[2] See footnote 1.

Wonderly's material is a preliminary phonemic and morphological analysis of the Zoque language of Mexico. It includes a phonemic statement, a chapter on phonological processes, and a morphological analysis under four major form-classes: nouns, verbs, particles, and interjections. These materials have been largely re-analyzed by the same author and included in Zoque Phonemic and Morphological Structure, an unpublished doctoral dissertation (1947).

Nida's Bible Translating is an application of linguistic and ethnological principles to problems of translation.[3] General techniques of phonemic, morphological, and syntactic analysis are shown in relation to the translating and publishing of Biblical materials in aboriginal languages, including the problem of practical orthographies based on phonemic analysis. Emphasis is placed upon semantic problems of linguistic and cultural equivalence, with detailed discussion of a large number of vocabulary items.

The Translator's Commentary is largely a supplement to the volume just described. The first chapter is a brief treatment of translation problems, especially semantic and lexical. The remaining five chapters are commentary on specific Biblical passages. Typical items treated under each verse are: problems of textual criticism, exegesis, lexicon, syntax.

Linguistic Interludes is a background presentation, in popular style, of descriptive and historical linguistics, arranged as a series of dialogues. It attempts to break down a number of popular misconceptions about language, and to establish for the lay reader a number of principles essential to an adequate approach to present-day structural linguistics.

The Summer Institute of Linguistics Bibliography lists 72 published linguistic and ethnographic items by 30 investigators working under the Institute. These vary from items such as the works mentioned above to shorter items of technical or semi-popular nature. The materials listed in the bibliography may be classified into the following groups (the figure indicates the number of items): articles on Mexican languages 33 (15 of these appearing in IJAL), primers 6, textbooks and articles on general linguistics 18, technical or semi-popular ethnographic articles 9, reviews 2, miscellaneous 4. (Not included in the bibliography are several mimeographed, dittoed, and printed materials in Mexican languages designed for popular use by speakers of those languages; these include primers and literacy aids of various types, stories, Biblical translations, etc.) Of the items listed in the bibliography, 42 are dated 1945 or later.

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[3] A number of the principles treated in this book are summarized by Nida in his article entitled Linguistics and Ethnology in Translation-Problems (Word 1.194–208 [1946]).